

# Senate Hearings

*Before the Committee on Appropriations*

Y 4. AP 6/2: S. HRG. 103-281/  
PT. 2  
Agriculture, Rural Development, and...

## Agriculture, Rural Development, and Related Agencies Appropriations

*Fiscal Year* 1994

103<sup>d</sup> CONGRESS, FIRST SESSION

H.R. 2493

**PART 2** (Pages 1-369)  
NONDEPARTMENTAL WITNESSES

U.S. DEPARTMENT OF AGRICULTURE  
LIBRARY  
APR 19 1994  
U.S. DEPARTMENT OF AGRICULTURE  
LIBRARY



# AGRICULTURE, RURAL DEVELOPMENT, AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1994

---

## HEARINGS

BEFORE A

SUBCOMMITTEE OF THE  
COMMITTEE ON APPROPRIATIONS  
UNITED STATES SENATE  
ONE HUNDRED THIRD CONGRESS

FIRST SESSION

ON

### H.R. 2493

AN ACT MAKING APPROPRIATIONS FOR AGRICULTURE, RURAL DEVELOPMENT, FOOD AND DRUG ADMINISTRATION, AND RELATED AGENCIES PROGRAMS FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1994, AND FOR OTHER PURPOSES

---

#### PART 2 (Pages 1-369)

Nondepartmental witnesses

---

Printed for the use of the Committee on Appropriations



U.S. GOVERNMENT PRINTING OFFICE

68-611 cc

WASHINGTON : 1994

---

For sale by the U.S. Government Printing Office  
Superintendent of Documents, Congressional Sales Office, Washington, DC 20402

ISBN 0-16-043548-X

## COMMITTEE ON APPROPRIATIONS

ROBERT C. BYRD, West Virginia, *Chairman*

DANIEL K. INOUE, Hawaii  
ERNEST F. HOLLINGS, South Carolina  
J. BENNETT JOHNSTON, Louisiana  
PATRICK J. LEAHY, Vermont  
JIM SASSER, Tennessee  
DENNIS DeCONCINI, Arizona  
DALE BUMPERS, Arkansas  
FRANK R. LAUTENBERG, New Jersey  
TOM HARKIN, Iowa  
BARBARA A. MIKULSKI, Maryland  
HARRY REID, Nevada  
J. ROBERT KERREY, Nebraska  
HERB KOHL, Wisconsin  
PATTY MURRAY, Washington  
DIANNE FEINSTEIN, California

MARK O. HATFIELD, Oregon  
TED STEVENS, Alaska  
THAD COCHRAN, Mississippi  
ALFONSE M. D'AMATO, New York  
ARLEN SPECTER, Pennsylvania  
PETE V. DOMENICI, New Mexico  
DON NICKLES, Oklahoma  
PHIL GRAMM, Texas  
CHRISTOPHER S. BOND, Missouri  
SLADE GORTON, Washington  
MITCH McCONNELL, Kentucky  
CONNIE MACK, Florida  
CONRAD BURNS, Montana

JAMES H. ENGLISH, *Staff Director*

MARY S. DEWALD, *Chief Clerk*

J. KEITH KENNEDY, *Minority Staff Director*

---

## SUBCOMMITTEE ON AGRICULTURE, RURAL DEVELOPMENT, AND RELATED AGENCIES

DALE BUMPERS, Arkansas, *Chairman*

TOM HARKIN, Iowa  
J. ROBERT KERREY, Nebraska  
J. BENNETT JOHNSTON, Louisiana  
HERB KOHL, Wisconsin  
DIANNE FEINSTEIN, California  
ROBERT C. BYRD, West Virginia  
*ex officio*

THAD COCHRAN, Mississippi  
ARLEN SPECTER, Pennsylvania  
CHRISTOPHER S. BOND, Missouri  
PHIL GRAMM, Texas  
SLADE GORTON, Washington  
MARK O. HATFIELD, Oregon  
*ex officio*

*Professional Staff*

ROCKY L. KUHN

DANIEL T. DAGER

REBECCA DAVIES (Minority)

*Administrative Support*

CAROLE GEAGLEY



# CONTENTS

	Page
American Association of Nurserymen .....	2
American Association of Retired Persons .....	9
American Farm Bureau Federation .....	12
American Farmland Trust .....	15
American Federation of Government Employees .....	24
American Institute of Nutrition and American Society for Clinical Nutrition ...	28
American Sheep Industry Association .....	31
American Society for Microbiology .....	34
Amorient Aquafarm Inc .....	37
Arkansas Enterprise Group .....	38
University of Arkansas .....	43
Bedoukian Research, Inc .....	47
Beneficial Insectary .....	48
Biobase Technologies, Inc .....	50
Biosys, Inc .....	51
California Department of Food and Agriculture .....	52
California Prune, Raisin, and Walnut Marketing Boards .....	54
CCT Corporation .....	57
Center for Forest Products Marketing .....	58
Center for Science in the Public Interest .....	61
Children's Nutrition Research Center .....	64
Chocolate Manufacturers Association .....	69
Coalition for FDA Resources .....	70
State of Colorado .....	73
Colorado River Basin Salinity Control Forum .....	75
Consortium of Social Science Associations .....	77
Council for Agricultural Research, Extension, and Teaching .....	82
Delta Council .....	84
Delta Western, Inc .....	86
Eastern South Dakota Soil and Water Research Farm, Inc .....	88
Federation of American Societies of Food Animal Sciences .....	90
Food Animal Concerns Trust .....	92
Food Animal Production Medicine Consortium .....	93
Gulf Coast Research Laboratory .....	96
Harza Northwest, Inc .....	100
Health Industry Manufacturers Association .....	101
Humane Society of the United States .....	105
Hung's Shrimp Farm, Inc .....	109
Illinois Groundwater Consortium .....	111
University of Illinois .....	114
International Association of Fish and Wildlife Agencies .....	121
Limestone Springs Fishing Preserve .....	127
Louisiana Aquaculture Association .....	128
M&R Durango, Inc .....	130
Metropolitan Water District of Southern California .....	131
Mississippi State University Cooperative Extension Service .....	132
Monsanto Co .....	136
National Alliance for Fair Competition .....	138
National Aquaculture Association .....	142
National Association of Conservation Districts .....	144
National Association of Home Builders .....	148
National Association of State Universities and Land-Grant Colleges:	
Statement of Dr. Raymond J. Miller .....	151
Statement of Dr. C. Peter Magrath .....	157
Statement of Dr. Colin Kaltenbach .....	160
Statement of Dr. B.K. Webb .....	161
Statement of Dr. John M. White .....	164
Statement of Dr. David O. Hansen .....	167

# IV

	Page
Statement of Dr. Sunil K. Pancholy .....	168
Statement of Gilbert Tampkins .....	168
Statement of Dr. Sandra A. Helmick .....	172
Statement of Dr. John M. Bowen .....	175
Statement of Dr. Alan R. Ek .....	180
National Association of WIC Directors .....	183
National Cattlemen's Association .....	189
National Center for Resource Innovations .....	193
National Cooperative Business Association .....	198
National Cotton Council of America .....	199
National Council for Agricultural Education .....	204
National Electrical Manufacturers Association .....	207
National Nutritional Foods Association .....	210
National Potato Council .....	217
National Resources Defense Council .....	219
National Rural Cooperative Development Task Force .....	221
National Rural Electric Cooperative Association .....	225
National Rural Water Association .....	234
National Utility Contractors Association .....	236
Navajo Nation .....	239
New Mexico State University .....	244
North American Strawberry Growers Association .....	248
North Central Regional Aquaculture Center .....	253
University of North Dakota .....	254
Northwestern University .....	258
Oklahoma State University .....	262
Statement of Crystal H. Pacleg .....	265
Pennsylvania Lamb Marketing Cooperative .....	268
Pennsylvania State University .....	269
Pharmaceutical Manufacturers Association .....	275
Pioneer Hi-Bred International, Inc .....	277
Prairie Public Television .....	278
Red River Trade Corridor, Inc .....	279
State of Rhode Island .....	283
University of Rhode Island .....	285
Rock Port Telephone Company .....	288
Rodale Institute .....	292
Rutgers, the State University of New Jersey .....	297
Saint Joseph's University .....	300
Society of American Florists .....	301
Society for Animal Protective Legislation .....	305
Soil and Water Conservation Society .....	309
South Texas Hatchery .....	314
University of Southern Mississippi .....	316
Southern Regional Aquaculture Center .....	320
Texas A&M University:	
Center for Meat and Poultry Safety and Quality .....	322
Center for North American Studies .....	324
Center for Southern Crop Improvement .....	326
Statement of Dr. Manuel Ibanez .....	328
International Dairy Goat Research Center .....	332
National Institute for Livestock and Dairy Policy .....	336
Support of the Regional Impacts of Farm Programs on Crop Farms .....	337
Wool and Mohair Laboratory .....	338
Texas Tech University .....	340
Statement of Hon. Strom Thurmond, U.S. Senator from South Carolina .....	343
Tufts University .....	345
United States Telephone Association .....	350
Upper Colorado River Commission .....	354
U.S. Agricultural Export Development Council .....	356
City of Vienna, GA .....	359
Whitefly Management Committee .....	363
Wildlife Management Institute .....	365
State of Wyoming .....	368

**AGRICULTURE, RURAL DEVELOPMENT, AND  
RELATED AGENCIES APPROPRIATIONS FOR  
FISCAL YEAR 1994**

---

U.S. SENATE,  
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,  
*Washington, DC.*

**NONDEPARTMENTAL WITNESSES**

The following testimonies were received by the Subcommittee on Agriculture, Rural Development, and Related Agencies for inclusion in the record. The submitted materials relate to the fiscal year 1994 budget request for programs within the subcommittee's jurisdiction.

(1)

## STATEMENT OF THE AMERICAN ASSOCIATION OF NURSERYMEN

Mr. Chairman, the American Association of Nurserymen (AAN) welcomes this opportunity to present the nursery industry's views regarding the Fiscal Year 1994 (FY94) budget for the U.S. Department of Agriculture (USDA).

AAN is the national trade association of the nursery industry. AAN directly represents 2,500 nursery growers, landscape professionals and garden center retailers. We represent an additional 16,000 family farms and small businesses through the membership of state and regional nursery/landscape associations.

### ECONOMIC STATURE OF NURSERY INDUSTRY

According to USDA's Economic Research Service (ERS), the nursery and greenhouse industry is the fastest growing agricultural sector in cash receipts with an average growth rate of 9 percent per year since 1982. Over the past decade, the value of grower cash receipts and retail sales of nursery and greenhouse products has expanded twice as fast as the gross national product. Nursery and greenhouse crops totaled an estimated \$9 billion in grower cash receipts in 1992 -- representing nearly 11 percent of the total cash receipts for all U.S. farm crops.

Nursery and greenhouse crops in 1992 ranked 6th in total grower cash receipts among all farm commodities -- ahead of such major crops as wheat, cotton and tobacco. Nursery and greenhouse crop production now ranks in the top five agricultural commodities in 23 states and in the top 10 in 42 states. USDA also finds that nursery and greenhouse farms in 1990 had the highest average net farm income of any agricultural commodity group at \$53,589. This is four times higher than the average American net farm income of \$13,458.

These impressive industry figures become even more so when one considers that unlike so many other agricultural sectors, the nursery industry does not receive -- nor does it want -- any federal subsidies or price supports. However, we feel it is critical to maintain the integrity of federal research programs vital to the nursery industry. Yet, despite producing nearly 11 percent of all U.S. grower cash receipts, the nursery industry directly benefitted from only two-hundredths of one percent (0.02%) of all federal agricultural research. Particularly since the nursery industry does not receive subsidies, AAN believes the federal government's contribution to nursery industry research is proper and reasonable, yet it remains vastly underfunded.

Nonetheless, nursery farmers are very cognizant of the rising federal deficit and are supportive of the steps of the Administration and Congress to reduce federal expenditures. AAN, therefore, generally supports the savings proposed in the FY94 budget.

### I. ECONOMIC RESEARCH SERVICE

#### Continuation of Economic Analyses of Nursery Industry

ERS provides agricultural economic information addressing the concerns and decision-making needs of farmers, consumers, extension workers, and government officials. For example, ERS provided the nursery farmer cash receipts statistics above. The nursery industry relies heavily upon this ERS data -- it is this nation's single source of such vital nursery industry statistics. These comprehensive data analyses are simply not available elsewhere. It is absolutely critical to the nursery industry for ERS to continue such analyses.

AAN respectfully requests Congress to appropriate \$95,000 in FY94 to USDA's Economic Research Service specifically to continue providing these critical economic analyses of the nursery industry.

### II. AGRICULTURAL RESEARCH SERVICE

#### Plant Science

AAN thanks the Administration and Congress for the continued and increased support of the Agricultural Research Service (ARS), particularly its plant science research and programs on plant productivity affecting environmental horticultural crops. AAN is supportive of ARS involvement with landscape plant breeding and germplasm programs. We favorably view increased research activity in programs which involve an integrated approach to the development of pest and stress-resistant woody landscape plants, as well as preservation of their diversity and evaluation of their performance in the landscape.

In view of these programs which benefit the nursery industry, AAN supports the increase in the ARS plant science budget to \$244.7 million. However, considering



that grower cash receipts for floral and nursery crops account for nearly 11% of all U.S. farm crop receipts, we strongly urge this Committee to direct ARS to allocate more than the present 0.02% of its plant science budget to floral and nursery crops research.

#### Northwest Nursery Crops Research Center (Oregon)

The American public is demanding more and more plants and trees to help clean and cool the air, stem run-off and soil erosion, and improve water quality and conservation. As a direct result, the nursery industry is playing significant and ever-increasing environmental and research roles. National studies have shown that properly planted trees in residential and commercial landscapes have not only helped to lower air pollution, but can substantially reduce this nation's annual energy costs by \$2 billion.

Simultaneously, and in response to the public's growing environmental awareness, the nursery industry has placed demands upon itself in the areas of pest management, reduction of chemical usage, searches for non-chemical alternatives, reduction in water quantity, and improvement of water quality. Yet, the nursery industry's ability is limited to conduct all of this necessary research even as our nation's environmental needs increase.

Up to 90 percent of all nursery crops produced in the Northwest are shipped out of the region to other states. This is much higher than the national average of 50 percent. By law, these shipments must be essentially free of injurious pests. Many nursery crop shipments involve entire plants with soil intact. As a result, they must be inspected and then shipped in compliance with federal and state pest quarantine regulations and phytosanitary certifications.

AAN respectfully requests Congress to provide \$1.5 million to USDA's Agricultural Research Service for the establishment of a Northwest Nursery Crops Research Center. Not one penny of the requested funds is for brick or mortar -- the facilities already exist at the USDA/ARS Horticultural Lab in Corvallis, Oregon. All of the requested funds is for research personnel and program support in the environmental research areas noted above.

While the research would be conducted in Oregon, Idaho and Washington, it will provide broad benefits to nursery farmers, landscape professionals, garden centers and consumers across the entire nation. Undoubtedly, many of the anticipated benefits from this proposed research center will go beyond the nursery industry and be applicable to other agricultural sectors.

The Northwest Nursery Crops Research Center enjoys the unified total support of not only the American, Oregon, Washington and Idaho nursery associations, but also the endorsements of Oregon State University, Washington State University, the University of Idaho, as well as their related Extension Services.

AAN is genuinely appreciative of the strong supporting language which both the House and Senate Appropriations Committees included in their respective committee reports for FY93. We are hopeful that Congress will see the investment in appropriating adequate funding to get the Northwest Nursery Crops Research Center underway in FY94.

#### USDA Florist and Nursery Review

In an effort to address the increasing need for research and support in the nursery and floral industry, USDA appointed Dr. Marc Cathey last year as the National Chair for Florists and Nursery Crops Review. USDA created the position after recognizing that the floral and nursery industries received the least support for research even though they are the fastest growing segments of U.S. agriculture. AAN is hopeful that this formal ARS review will help our industries obtain the critical support needed for research projects, particularly since the number of available researchers has decreased, posing a threat to the future of the floral and nursery industries. Dr. Cathey's mission has been to lead an effort that has assessed and prioritized the floral and nursery industries production and market research needs. His work has created an opportunity for the first time for our agricultural segments to be included in the USDA-ARS report to Congress.

AAN is fully supportive of this USDA effort to address the increasing need for research and support in the nursery and floral segments of agriculture. A consensus panel of federal, state and privately funded scientists will create a national research plan for floral and nursery agriculture. The plan will center on systems for profitability and environmental responsibility. An analysis of the economic benefits, and consumer impact of the plan will also be developed. We hope

this Committee will acknowledge and look favorably upon this new research initiative.

#### Pesticide Clearance

The Inter-Regional Project #4 (IR-4) has greatly assisted the nursery industry's efforts to obtain more prompt pesticide registrations for minor use crops when such pesticides are already registered for use on food or feed crops. These pesticides are absolutely essential for nursery crop farmers to comply with state and federal regulations requiring nursery crops in interstate shipment to be 100% pest-free. Since nursery farmers must have safe, effective pesticides available to meet these requirements, it is essential that ARS continue and strengthen its pesticide clearance program research activities on nursery crops.

#### Nursery Crop Research Station (Tennessee)

This station will address national research problems affecting environmental horticulture. Anticipated research priorities include: (1) development of plant breeding programs, genetic enhancement of nursery crops and effective pest management; (2) testing and evaluating new germplasm presently available through the U.S. National Arboretum; (3) stress tolerance in plants; and, (4) drip and other irrigation systems for nursery production.

AAN supports the proposed \$500,000 for ARS in FY94 to begin implementation of this needed research at the Nursery Crop Research Station in McMinnville, Tennessee. AAN commends ARS for its cooperative efforts in working with Tennessee State University and the Tennessee nursery industry.

### III. COOPERATIVE STATE RESEARCH SERVICE (CSRS)

#### National Initiative for Research on Agriculture, Food and Environment

AAN sincerely thanks Congress for supporting this national initiative begun in FY91. We are also appreciative that Congress has directed that at least 20% of the awarded funds be used for applied and multidisciplinary research projects. AAN supports the proposed increase to \$130.2 million for FY94.

#### State Agricultural Experiment Stations (SAES)

AAN continues to wholeheartedly support CSRS programs -- not only the National Research Initiative, but also the important national priority programs in university research through the Hatch Act. Due to the importance and effectiveness of these programs, and the value received from CSRS research, AAN supports an increase for FY94 to \$177.2 million. AAN likewise urges the SAES Directors to equitably increase funding of research which is classified as "Research Program 3.15 - Plants to Enhance the Environment."

#### Nursery Crop Research Station (Tennessee)

AAN is deeply appreciative of Congress appropriating funds in FY93 for the Nursery Crop Research Station in McMinnville, Tennessee. The need still exists however for additional funds. Specifically, AAN urges Congress to provide \$468,000 which is needed to support the ARS program as outlined above.

#### Special Grants

##### Pesticide Clearance

For the reasons noted above, nursery farmers must have safe, effective pesticides available to meet federal and state quarantines. CSRS must continue its pesticide clearance program research activities, particularly in light of the 1988 amendments to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), which required the reregistration of many pesticides. Since the number of research trials funded in the environmental horticulture area has decreased dramatically over the last several years as a result of reduced funding, the reregistration process is exacerbating an already bad situation. AAN strongly urges this Committee to support the Administration's proposed \$10 million in FY94 for CSRS to more effectively continue its pesticide clearance research program.

### Pesticide Impact Assessment

The CSRS pesticide impact assessment program is also very important to the nursery industry. We support the proposed FY94 appropriation of \$3 million.

### Integrated Pest Management Research

As previously mentioned, the nursery industry is, by its very nature, committed to protecting and beautifying the environment. As a result, it is turning increasingly towards integrated pest management systems where available and proven effective. However, additional research on nursery crops is necessary to properly implement such systems. AAN supports the proposed increase in FY94 funding to \$7 million for CSRS development of improved integrated pest management production systems -- especially for nursery crops.

### Water Quality

AAN supports the proposed \$9 million in FY94 funds to continue USDA water quality research at universities and other institutions as part of a coordinated government-wide initiative. We concur with the major objective of the USDA water quality program to provide the agricultural community with the information necessary to voluntarily adopt improved, environmentally-sound management practices which do not sacrifice profitability. This supports AAN's goal to establish the nursery industry as the champion of prudent water use.

### Global Climate Change Research

Entire segments of agriculture, including environmental horticulture, can be adversely affected by shifts in temperature and rainfall. The potential effects on climate patterns which may result from increased concentrations of carbon dioxide and other gases is of increasing concern to the nursery industry. Trees and other landscape plants represent very low-cost means for significantly reducing energy consumption and carbon dioxide build-up which contribute to any potential global climatic changes. AAN supports the proposed \$3 million in FY94 for global change research as USDA's contribution towards this government-wide research and data analysis program.

### Biological Impact Assessment

AAN encourages Congress to support the \$300,000 appropriation in FY94 for biological impact assessment. This program supports a database to monitor the impacts of biotechnology.

### Solid Waste Management

The pressure on landfills is generating an increasing need to convert waste materials into useable products. Technological advancements are required to achieve this need and to reduce the amount of material for which disposal is required. We therefore support an additional \$3 million appropriation in FY94 for solid waste management research. This research will provide valuable information for the proposed waste management educational program of the U.S. Extension Service.

## HIGHER EDUCATION

### Graduate Training Fellowships

Without competitive graduate training grants, the adequate development of agricultural professionals for the next generation will be extremely difficult. Attracting the best and brightest scholars can rationally and profitably be considered an important investment. This competitive graduate fellowship grants program is designed to attract outstanding U.S. scholars to pursue graduate studies in targeted national priority areas in the agricultural sciences. Funding at \$3.6 million will enhance the recruitment and support of nearly 100 outstanding doctoral students for a three-year period, as well as 70 Masters fellows for a two-year period of study.

### Institution Challenge Grants

The USDA Institutional Challenge Grants program is a catalyst encouraging innovation and quality improvement in the U.S. food and agriculture higher

education system. In addition, the program promotes university partnerships with industry, as well as among colleges and universities.

The program also stimulates non-federal support for higher education by requiring matching funds for all grants. This type of innovative, cooperative program is rarely instituted on our university and college campuses unless federal funds are available to catalyze such endeavors. Targeted areas of support include curricula design and materials development, faculty preparation and enhancement, innovative instructional and delivery systems, and student experiential learning.

AAN believes a steady increase in funding will help both these higher education programs. We favor the proposed increase to \$3.6 million for graduate training fellowships, but an increase to \$4 million for Institution Challenge Grants in FY94.

#### IV. EXTENSION SERVICE (ES)

Representatives of the Extension Service provide invaluable assistance to the environmental horticulture industry and the estimated 72 million American households who participated in one or more types of indoor/outdoor lawn and garden activities in 1992. ES provides consumers with information on how to properly care for our industry's products enabling them to enhance the environment. The Extension Service is also a logical and invaluable resource for those seeking information about the production, care and marketing of high-value nursery crops. AAN is pleased to note the proposed FY94 increase in the Smith-Lever 3(b&c) funds, but it is simply not enough. AAN supports an increase to \$275.8 million.

#### Water Quality

An adequate supply of high-quality water is often taken for granted. Yet, recent threats to its stability profoundly affect the future of agriculture, the overall economy, and the health of American citizens. This priority national initiative addresses the major educational concerns relating to water quality and management.

Using the information generated through research, extension specialists provide educational programs and demonstrations on water quality and management options in relation to soils, pesticide usage, nutrients, animal wastes, and safe drinking water supplies. According to a report by the FY94 budget committee of the National Association of State Universities and Land Grant Colleges, the resources appropriated over the past four years have been used to increase Extension's educational efforts in 74 hydrologic zones and 16 demonstration sites in support of a coordinated multi-agency effort at the national level.

To continue these efforts, AAN supports the proposed \$11.4 million in the President's request for FY94.

#### Waste Management

Solid waste disposal is a critical environmental concern. AAN believes there must be a concerted educational effort to achieve those levels of understanding necessary to effect a reduction in the amount of material for which disposal is required, and to encourage recycling and yard waste composting. As a result, AAN supports a \$3 million add-on in FY94 for this new Extension Service program.

#### Integrated Pest Management

The public's concern about groundwater contamination and potentially harmful pesticide residues that may result from a heavy reliance on chemical pesticides has placed new constraints on pest management practices. A renewed emphasis on natural control as the cornerstone for integrated pest management is critical to provide pest management technology consistent with the production and environmental goals set by society. Extension specialists work with producers, businesses and homeowners to facilitate adoption and implementation of a balanced and healthful system of insect, weed and disease management.

AAN thanks the Administration for appropriating a FY94 increase to \$8.6 million for this ES pest management program. Considering the importance of proper integrated pest management education, AAN strongly supports a further increase to \$10 million for FY94.

#### Pesticide Impact Assessment

As mentioned previously under the CSRS portion of this testimony, research programs will identify the information needed to make informed regulatory decisions on registered pesticides that significantly benefit U.S. agriculture without causing adverse effects to human health or the environment. Extension specialists collect



data and disseminate research-based information to producers and consumers at the state and local level. As a result, AAN supports a \$3.7 million appropriation in FY94 for the ES Pesticide Impact Assessment program.

#### V. ANIMAL & PLANT HEALTH INSPECTION SERVICE (APHIS)

International and interstate trade in nursery crops is governed by inspection and quarantine laws designed to prevent or slow the inadvertent artificial spread of hazardous agricultural pests. It is the responsibility of APHIS, in cooperation with state departments of agriculture, to promulgate and enforce such quarantines. AAN strongly supports APHIS' request for adequate program funds to prevent the introduction of new foreign plant pests, as well as to prevent the spread of certain previously-introduced pests. The continued growth and profitability of the U.S. nursery industry, and agriculture in general, depend on these vital APHIS programs.

##### Agricultural Quarantine Inspection (AQI)

Port-of-first-arrival inspections and, first-class mail inspection under the AQI program are the first line of defense against the introduction of damaging foreign pests that threaten U.S. agriculture and the environment. Roughly 80% of funds budgeted for this program will be generated from user fees levied broadly on international travel and commerce. AAN supports this approach, so long as funds generated from such user fees are exclusively reserved for the AQI program.

The success of the AQI program is dependent on adequate staffing. Given that the bulk of the AQI program is funded through user fees, it is incumbent upon APHIS to provide a level of service that supports orderly and efficient international travel and commerce, without compromising pest exclusion goals. Therefore, the AQI program must have ready access to user fee revenues generated in excess of the AQI User Fee budget as a result of greater-than-anticipated international travel and commerce. AAN strongly supports budget language that would permit APHIS to exceed the AQI User Fee limitation by up to 10 percent, provided such funds are available in the AQI User Fee account, with notification to the Appropriation Committees.

Quarantine 37 (Q-37), the federal quarantine that regulates the importation of nursery plants and related commodities, is currently under revision. APHIS is evaluating numerous requests from several foreign countries to allow the importation of additional plants into the U.S. in growing media. A number of foreign pests have been introduced into the U.S. since Q-37 was first promulgated and, in many cases, these pests have seriously hampered trade in nursery crops. A biologically strong and effective Q-37, and an equally strong AQI program, are vital to protecting nursery and agricultural interests, and the environment, from potentially damaging foreign plant pests.

##### Imported Fire Ant

The imported fire ant is a serious menace to human health and agriculture, but it is not directly injurious to nursery plants. Nevertheless, nursery farmers throughout much of the South bear the burden of the cost of quarantine compliance to prevent the spread of imported fire ant to uninfested areas via nursery crops.

AAN is deeply concerned that the proposed APHIS budget for FY94 does not include line-item funding for imported fire ant. AAN supports an appropriation of \$3.698 million, which represents no increase over the FY93 funding level.

AAN strongly supports adequate funding for APHIS to fulfill its federal domestic imported fire ant quarantine program responsibilities, in cooperation with state regulatory officials in the infested states.

Nursery farmers currently lack a fully effective, affordable pesticide treatment for imported fire ant quarantine certification. APHIS must maintain a strong methods development program to identify, approve, and expedite new imported fire ant quarantine treatments.

##### Sweet Potato Whitefly

AAN supports the proposed APHIS FY94 funding of \$3.558 million for survey and parasite-rearing programs to combat this pest, which continues to ravage vegetable, fruit and nursery/greenhouse crops, especially in California, Florida and Texas.

Methods Development Funding

Nursery farmers must meet APHIS certification requirements for freedom from troublesome pests such as imported fire ant, pine shoot beetle, and Japanese beetle, prior to moving their crops interstate or into Canada. APHIS funds critical methods development projects to identify new tools and strategies to eliminate or prevent such pest infestations on nursery crops, and to facilitate commerce. AAN strongly supports the proposed \$5.148 million in FY94 for continued plant quarantine methods development work.

CONCLUSION

As in past years, Mr. Chairman, AAN truly appreciates this opportunity to present the nursery industry's views regarding agricultural research and USDA's annual budget. Thank you for your consideration and we stand ready to work with you and your staff.

American Association of Nurserymen  
FY94 Research Appropriations Testimony  
Summary

<u>Program</u>	<u>Support</u>
<u>Economic Research Service</u>	
Nursery/Greenhouse Industry Statistical Analysis. . . . .	\$ 95,000 additional
<u>Agricultural Research Service</u>	
Plant Science . . . . .	\$ 245 million
Northwest Nursery Crops Research Center (Oregon). . . . .	\$ 1.5 million additional
Pesticide Clearance (IR-4). . . . .	\$ *
Nursery Crop Research Station (Tennessee). . . . .	\$ 500,000
<u>Cooperative State Research Service</u>	
National Initiative for Research. . . . .	\$ 130.2 million
Nursery Crop Research Station (Tennessee). . . . .	\$ 468,000 additional
Hatch Act Formula Funds . . . . .	\$ 177.2 million
Pesticide Clearance (IR-4). . . . .	\$ 10 million
Pesticide Impact Assessment . . . . .	\$ 3 million
Integrated Pest Management & Biological Control . . . . .	\$ 7 million
Water Quality . . . . .	\$ 9 million
Global Change . . . . .	\$ 3 million
Biological Impact Assessment. . . . .	\$ 300,000
Solid Waste Management. . . . .	\$ 3 million additional
<u>Higher Education</u>	
Graduate Training Fellowships . . . . .	\$ 3.6 million
Institution Challenge Grants . . . . .	\$ 4 million
<u>Extension Service</u>	
Smith-Lever 3(b6c). . . . .	\$ 275.8 million
Water Quality . . . . .	\$ 11.4 million
Waste Management. . . . .	\$ 3 million additional
Pest Management . . . . .	\$ 10 million
Pesticide Impact Assessment . . . . .	\$ 3.7 million
<u>Animal &amp; Plant Health Inspection Service</u>	
Agricultural Quarantine Inspection. . . . .	\$ User Fees
Imported Fire Ant . . . . .	\$ 3.698 million
Sweet Potato Whitefly . . . . .	\$ 3.558 million
Methods Development Funding . . . . .	\$ 5.148 million

\* While specific funding levels are not cited herein, AAN requests Congress to provide adequate FY94 funding to maintain current programs and pursue additional needs.

## STATEMENT OF THE AMERICAN ASSOCIATION OF RETIRED PERSONS

AARP appreciates this opportunity to comment on some of the Administration's proposals concerning rural housing as well as the Food Stamp Outreach Program. Reflecting the Association's concern with the housing and economic circumstance of rural older people, our recommendations may be summarized as follows:

- o Substantially increase funding for the Section 504 home repair grant program;
- o Increase funding for the Section 515 rental housing program with special emphasis on congregate facilities for the frail elderly. Provide funding for services coordination in projects serving significant numbers of frail older or disabled persons;
- o Provide funding for the migrant/homeless program; and
- o Fund the Food Stamp Outreach program at the \$5 million authorization ceiling.

### POVERTY AMONG RURAL OLDER PEOPLE

Some of the nation's most persistent economic, housing, and health problems are concentrated in rural areas among older people. In 1990, older people living in nonmetropolitan areas had a poverty rate of 16.1%, compared with 8.1% for those living in the suburbs and 14.6% for those living in central cities.

Economic problems are particularly severe among older rural minorities and women living alone. When these factors are combined, poverty is nearly universal. In 1987, 80% of older black women living alone in rural areas had incomes below the poverty line. Among all rural blacks, the poverty rate in 1990 was 46.5%. Especially hard-pressed by rural poverty is the southern U.S., where the nine states with the highest rate of poverty for older people are all located.

In addition to problems associated with low incomes, older persons in rural areas have much less access to needed services. The lack of services in rural areas has driven too many older people to giving up their homes to relocate to areas and facilities where services are available.

The Association urges special attention to the plight of older migrant and seasonal farmworkers. Working and living conditions, which are generally bad for farmworkers of all ages, are abysmal for older farmworkers. Earnings for farmworkers over age 65 who are engaged exclusively in farmwork averaged only \$3227 in 1987, and many receive no Social Security or other benefits. Not surprisingly, farmworkers often experience problems characteristic of the elderly before reaching their fiftieth birthday. Disability levels are high -- 44.5% of farmworker families include a disabled member according to one federal study. Unfortunately, access to needed services has often been blocked by prejudice, language barriers, and a lack of outreach.

To address the problems associated with poverty among rural older people, our recommendations will focus on two areas under the jurisdiction of this Subcommittee: rural housing and food stamp outreach.

## RURAL HOUSING

One result of high rates of rural impoverishment is a striking concentration of housing problems among rural older people. Data from the 1987 American Housing Survey indicate that 45% of older people living in severely inadequate housing reside in rural areas, though only 16% of all older households live in rural areas. In all, 13% of all nonmetropolitan housing units occupied by older people in 1985 were substandard.

Despite the record of success of Section 504 home repair grants, funding cuts have substantially reduced the number of households served each year. In 1980, over 8,000 older families were assisted by this program, a number that shrank to 3,678 in 1992. The Farmers Home Administration reports that, at the end of FY 1992, a backlog of over 6,935 eligible applicants were waiting for Section 504 grants, a number roughly twice that which can be served at the current funding level. The additional resources requested by the President in the supplemental spending bill pending before Congress will reduce the current backlog by about one-third.

While we recognize the constraints imposed by the budget agreement, AARP urges the Subcommittee to provide a substantial increase over the current funding level for Section 504 grants. The Section 504 loan program should be similarly increased to a level sufficient to match the grants.

A June 1990 FmHA survey indicated that there were roughly four times as many applications for Section 515 housing as could be funded, indicating the degree of unmet need in rural areas. AARP recommends that funds for this program be increased, with stronger priority given to serving previously underserved areas and populations such as older farmworkers.

Congregate facilities, created both in new projects and through retrofitting of existing projects, should especially be encouraged. Because of the scarcity of social services in many rural communities, congregate housing programs that provide nonmedical services such as meals, housekeeping, and transportation can be especially crucial to the independence of frail older people in rural areas. Unfortunately, since the Farmers Home program finances only the capital costs of constructing facilities, the lack of services and management personnel continues to present obstacles to expanding the FmHA congregate housing program. We strongly urge the Subcommittee to provide funding for services coordination in facilities serving significant numbers of frail older or disabled persons. We also urge the Subcommittee to seek a plan of action from the Secretary for utilizing programs under the jurisdiction of the Department of Agriculture -- such as FmHA community facilities, nutrition, homemaker, transportation, and other programs -- and other agencies to facilitate services provision in congregate projects both to residents and to older people in the surrounding community.

Finally, AARP urges greater attention to programs providing affordable housing to remote rural areas and areas with large concentrations of underserved populations such as older and disabled farmworkers. We support the set-aside of funds for remote rural areas as included in the Housing and Community Development Act of 1992. In addition, the Association supports funding for the program for migrant workers and rural homeless people. Migrant workers tend to be older than other farmworkers and are more likely to be minorities with extremely low incomes.

## FOOD STAMP OUTREACH

The low incomes received by many rural older people not only result in housing problems, but also in a reduced ability to purchase adequate food to maintain a healthy diet. Because diet is crucial to the maintenance of good health, persons with low incomes must have improved access to Food Stamp benefits.

Outreach is needed to inform potential recipients of their eligibility for Food Stamps and to assist them in completing application forms. The social and physical isolation of rural older people makes outreach difficult but all the more essential in rural areas. Food Stamp participation rates are low among rural people, in part because they lack information about the program and in part because of their distance from food stamp offices. A 1984 study by the U.S. Department of Agriculture (USDA) found that 27% of non-participants lived more than nine miles from the nearest office; 31% of non-participants indicated that getting to the food stamp office was a "big problem." GAO (1988) reported that 51% of eligible non-participants did not apply for food stamps in 1986 because they perceived themselves as being ineligible.

A pilot program initiated by AARP in 1990 demonstrates that Food Stamp Outreach can make a big difference in linking eligible low-income older people with needed benefits. As a result of stationing eligibility workers at one senior center in Memphis, 113 new applications were filed. A three-hour phone-a-thon in Cleveland produced inquiries from 400 people, the majority of whom were referred to the local Food Stamp office. Bilingual/bicultural workers and materials were successfully used to reach rural, older Hispanic families in Las Cruces, New Mexico. The evaluation of AARP's rural outreach project revealed important information about the complexities of outreach in rural settings, particularly in the areas of information dissemination, target populations, relative poverty differences, the impact of various outreach techniques, and availability of volunteers.

AARP strongly urges the Subcommittee to fully fund the Food Stamp Outreach program next year at its \$5 million authorization ceiling. A relatively small amount of money for this program can make a large difference in the lives of families with low incomes.

Thank you again for the opportunity to present our views on rural housing and food stamps. We look forward to working with the Subcommittee to improve the lives of rural Americans of all ages.



## STATEMENT OF THE AMERICAN FARM BUREAU FEDERATION

The American Farm Bureau Federation is the nation's largest general farm organization with a membership of over 4 million member families in 50 states and Puerto Rico. Farm Bureau members produce virtually every type of commodity grown commercially in this country. Our policy is developed by producer members at the county, state and national levels of the organization.

We are extremely concerned that commodity programs have been targeted for excessive spending cuts in the FY 1994 budget. These cuts must be considered in the context of what has occurred in the budget for commodity programs since 1986. Spending on farm programs has been reduced by more than 50 percent since 1986. In every budget-cutting exercise since that time, agricultural spending has been reduced by more than the rate of reduction applied to other programs. For example, in the 1990 Budget Reconciliation Act, agricultural spending was cut by over 20 percent, a greater percentage than any other program. Agriculture has been willing to do its share to reduce the deficit, but the cuts that have been imposed as well as those proposed are clearly disproportionate.

Many of the program changes necessary to achieve the president's deficit reduction plans do not fall within the purview of the Appropriations Committee, but we believe it is important for you to be aware of our position.

In President Clinton's proposal, agricultural programs are once again targeted for cuts that will exceed the rate of spending reduction for the entire budget. The large cuts called for by President Clinton, which would be fully effective in FY 1996-98, would cause farm program spending to be 25 percent less per year than would occur under current law. We find neither the equity nor fairness in this distribution of the burden for reduced spending.

The specific budget cuts proposed by the president are troubling to us. AFBF believes that the cuts would prove to be detrimental to our ability to compete in world markets. Other proposed cuts would cripple program provisions that have been both constructive and cost-effective, and some of the proposed cuts simply will not achieve the proposed savings that have been attributed them. The following points are some of our objections to specific budget cuts:

(1) \$100,000 Off-Farm Income Test: Farm Bureau supports the current program payment procedures and opposes any action that would further target program benefits. We believe that unwise targeting of program benefits will be detrimental to the current production and marketing infrastructure. We believe that agricultural programs will be less effective if arbitrary limits on eligibility are adopted. People will find ways to circumvent the restrictions and those who are made ineligible will produce in competition with the program, thus increasing the burden of supply adjustment on the farmers who remain under the program restriction. In addition, we believe the following points should be considered:

(a) Precedent: If such a means test were imposed, we are concerned that the limits placed on program participation would be expanded over time, ultimately rendering these programs totally ineffective;

(b) Enforcement: If this means test were in place, all farmers participating in the program would be required to prove that they do not exceed the off-farm income cap. This would require an overwhelming amount of documentation such as tax returns and bank statements which would severely strain the already overloaded ASCS system;

(c) Economic: Farmers, operators and landlords who share rent property to farmers are eligible for farm program benefits. Excluding participants will lead to restructuring of business relationships such as changing rental agreements from share lease to cash rent contracts. This will place a greater burden and much greater risk on the farm operator. Banks and other financial institutions are reluctant to finance operators who cash rent. Not only will it be more difficult for farmers to finance production costs, but it will greatly limit the cost savings expected from this proposal--if not eliminate it entirely.

(2) Increasing Flex Acreage: We believe that this is a very ominous budget cut which will come directly out of farm income and will further weaken the economic condition of many farmers and farm communities. As the unpaid acreage increases, more farmers will find the program to be lacking in sufficient benefits compared to the cost of setting aside acreage and complying with the conservation provisions of the farm bill. This could severely reduce the levels of program compliance.

(3) Elimination of 0/92, 50/92: The proposal to eliminate the 0/92 and 50/92 programs is projected to generate a budgetary savings of \$580 million. This is a very optimistic estimate of the potential savings, if there are any at all. Without the use of offsetting annual acreage reduction programs (ARPs), over 12.1 million acres would return to production. Without some offsetting actions, crop production will rise, prices will fall and deficiency payments will increase. And even if ARPs were to be increased, impacts on ARPs are not evenly distributed across all commodities.\*

In addition, there are hidden costs involved in the elimination of the 0/92 and 50/92 programs. These programs require conserving use crops which tend to provide substantial soil conservation benefits.

(4) Increased User Fees and Assessments: The budget proposal, as currently structured, seeks to raise an additional \$900 million over four years through additional assessments and user fees. There appears to be no relationship between program costs or benefits and the increased burden that will be borne by producers. If we examine federal expenditures associated with the dairy program for example, we note a substantial decline from the mid-1980s to the present.

Costs are not increasing and official estimates do not project an increase in the near future, yet it appears that dairy producers will be hit with a 67 percent increase in their "milk tax" or assessment. This would place their assessment at about 19 cents per hundredweight of milk sold and would generate approximately \$288 million. This could come close to equaling, or in some years exceed, the government costs associated with the program. In fact, the assessment programs for sugar and soybeans are already net contributors to the federal budget. Thus, for these programs the assessments are not just an element of budget reduction, but rather they constitute a tax on sales or marketing rather than simple budgetary savings. This is not an equal sharing of the burden of deficit reduction.

---

\* Annual ARPs would need to be increased by 3.4 percent for corn; 9.8 percent for grain sorghum; 13.9 percent for barley; 14 percent for oats; 5.3 percent for wheat; .7 percent for cotton; and 8.5 percent for rice. Increasing ARPs by this much would reduce net farm income by \$805 million.

U.S. producers are placed at a disadvantage in domestic markets since their production costs are raised by the amount of the increased assessment, while imported products have no similar levy to contend with. This makes producers less competitive and places them at financial risk.

We are also concerned about plans to increase inspection fees for meat and poultry. A basic responsibility of the federal government has been to provide for the health and safety of the American public. The meat and poultry inspection system has been designed to ensure public health. Consumers are the primary beneficiaries from the system rather than producers and thus should bear responsibility for its funding. Attempts to shift the cost to producers or industry will erode consumer confidence in the system and place additional stress on the rural economy.

Farm Bureau is concerned that President Clinton's proposal for reducing the deficit, if enacted, will severely damage conditions for agriculture. The energy tax will increase production costs, reduce farm prices and cause our products to be less competitive in world markets. Budget cuts for commodity programs would eliminate some very effective programs and destabilize the agricultural economy. In light of the very significant and painful budget savings that agriculture has absorbed over the past eight years, this burden is excessive.

We are concerned that discretionary USDA spending, whether in agricultural research or plant and animal health, continues to be a target for deficit reduction. Many of these and other USDA programs are important to production agriculture and, in fact, merit increases. Any increases will require a shifting of resources from other USDA programs, and we ask the subcommittee to reallocate funds from lesser priority areas to those which have urgent need. A reallocation, rather than new spending, would enable the previous year's appropriations level to be maintained.

Farm Bureau's general position on the budget continues to be support for a freeze in total federal spending at the previous year's appropriations level with the exception of interest payments on the national debt and natural disasters. Spending restraint, rather than tax increases, must be imposed to balance the budget. Without spending restraint in every budget function, including defense and all entitlements, discretionary spending, which includes many USDA programs, will have to bear a disproportionate share of spending cuts.

We recognize that the subcommittee's task is not easy and would be pleased to provide you with additional information if necessary.



## AMERICAN FARMLAND TRUST

## STATEMENT OF RALPH E. GROSSI, PRESIDENT

A Green Evolution:  
Retooling Agricultural Policy for Greater Sustainability

As we look forward toward the dawn of the next century, it is worth looking back at the changes in agriculture that have occurred during this century.

American agriculture has witnessed what has been called a "Green Revolution." Crop yields have increased dramatically as capital, technology and energy have been substituted for labor and land as farm inputs. Fewer farmers feed more people more cheaply than ever before. An American cornucopia has been created that is the envy of the planet.

But this increased productivity has come at a cost. A cost that the public and even many of my fellow farmers are now questioning.

One of the costs is direct. Federal farm support programs this year will cost taxpayers over \$40 million a day. Few Americans understand what they get for this expense of direct payments and many more millions in hidden subsidies. Most of it is paid to a handful of producers, while the institution of the family farm is threatened. Meanwhile, there is evidence that the expenditure actually worsens the environmental impact of agriculture.

Which leads me to the second, less visible, cost -- environmental degradation. The natural resources that support food production and environmental quality have been allowed to deteriorate. Topsoil erodes, prime farmland is paved, wetlands are

filled, streams and lakes are polluted. Agriculture isn't the only contributor to these problems, but it is a large and increasingly visible target.

Finally, producers themselves are questioning whether it is all worth the trouble. With higher input costs -- fertilizer, chemicals, energy and let's not forget regulatory compliance -- the farmer's bottom line is often getting worse, not better. He or she receives a smaller share of the consumer's food dollar than at any time in history; and the stress of farming has never been greater.

All these trends call into question the long-term sustainability of our current agricultural system; about the ability of farmers, agribusiness and government to continue pursuing -- and defending -- the status quo in the face of growing public concern about its mounting social, environmental and budgetary costs.

To address this concern, it is no longer enough for agriculture to say to the rest of society, "Don't complain with your mouth full." For, like it or not, society now demands more of agriculture than just putting food on the table.

Instead, agriculture must engage society in a broad effort to help it change the status quo. To promote a farming system that is in harmony with the environment. A farming system that supports producers as good stewards of the land. A system that is affordable to the Treasury. And a system that results in genuine economic efficiency and competitiveness in the production of food and fiber for an open and changing global marketplace. In short, a farming system that is more sustainable than what exists today.

The emergence of such an agriculture will require changes no less dramatic than those of the Green Revolution. A deliberate and gradual shift in priorities -- what might be called a "Green Evolution" of U.S. Agriculture -- toward principles of resource stewardship and marketplace economics which we must recognize are not mutually exclusive goals!

There are three major themes that we believe can animate this Green Evolution. Three principles on which producers and consumers -- the rest of society -- can find common ground for policy reform. First, is the principle of shared responsibility. Second, is the idea of a new generation of conservation incentives. Third, but not least, increased attention to the special challenges of farming in the shadow of suburbia. Let me elaborate on each of these themes.

The first theme of the Green Evolution is shared responsibility.

The starting point in the search for common ground is a recognition that agriculture is a partnership between producers and consumers. Without consumers there would be no need to cultivate the land. Without producers there would be nobody to do it. We are not going to solve the problems of agriculture without the cooperation of both partners.

Cooperation requires that consumers and producers deal with each other in good faith. Production agriculture should no longer try to belittle the impact of farming on the environment nor exaggerate the effect of regulations on farmers. Consumers should not expect producers to sacrifice their property rights or shoulder the entire cost of protecting the environment.

It is the uncertainty over responsibility that is at the heart of the conflict between farmers and environmentalists. With good science and education we can probably come to some agreement on the values, so important to the public, associated with our farms. You know them well; open space, wetlands, water quality, wildlife habitat, and more.

But many of these values - that mean so much to our city neighbors - do not improve profitability. No, the benefits accrue to the rest of society and to future generations. On our farm we have deer, ducks, mountain lions and some breathtaking views. Our farm also protects a municipal watershed. But my banker won't let me add these values to my balance sheet. Yet they exist! I believe in protecting those values but not all landowners can afford to do it alone. We must continue to find new ways to share in the cost of stewardship of our natural resources.

The second theme of the Green Evolution is a new generation of direct conservation incentives. These "green" incentives would reward agricultural producers for scrupulously protecting environmental resources such as highly-erodible soils, wetlands, critical wildlife habitat, sensitive watersheds and strategic farmlands that we cannot afford to lose to development. These incentives would be independent of commodity production and, thus, give farmers the liberty to produce for the marketplace rather than the government. For the most part, they would be a further evolution of programs that are familiar to us all, like Agriculture Conservation Program (ACP), Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP) and Purchase of Development Rights (PDR). But creative thinking is demanded here to develop more of the tools necessary for sharing the financial responsibility of protecting our natural resources for future generations. The new generation of programs would create legally-binding, long-term stewardship responsibilities, institutionalizing the conservation ethic, and would rely largely, but not entirely, on the funding

itself and peer pressure at the community level for their enforcement. These incentives could gradually replace traditional commodity programs as a source of farm income support, guaranteeing U.S. food security by protecting both the production infrastructure and the resource base that is America's greatest competitive advantage.

If we phased out market-distorting commodity programs -- I emphasize that this would have to be done carefully and gradually -- we could easily afford a significant green incentives system. Such a system would ultimately be more cost effective than a police force to accomplish the same ends. The amount taxpayers will spend directly this year on federal farm programs, about 17 billion dollars, would, for example, enable us to make annual conservation payments of fifty dollars on every acre of U.S. cropland now in cultivation. Needless to say, the amount paid per acre would vary with the capability of the land and the measures needed to assure its stewardship. But this simple example gives you an idea of the scale of what is possible, even if some of the savings from commodity program reform is devoted to reducing the federal deficit.

If this all sounds Pollyanna-ish, consider the alternatives. One alternative would be to try to maintain the status quo. In which case we will probably see government farm program support continue to decline in the face of budgetary realities and diminishing public support for agriculture. Like it or not, agriculture's image is changing -- and not improving. Farmers are, with increasing frequency being cast as the polluters of the environment. But denials and defensiveness aren't getting us anywhere because the charges against agriculture are not without some justification. Wouldn't it sound refreshing to hear the farm community say, "Yes, there are a small minority of farmers who do

a poor job of protecting the environment; and here is our plan to correct it."

The fact is that the status quo almost certainly cannot be sustained. The last election was about change and agriculture will not be an exception. But if the change is simply to reduce or eliminate commodity programs, it may or may not help agriculture solve the nation's environmental problems. Will producers be less likely to cultivate highly-erodible soils and drain wetlands? Or will they drive the land even harder in a desperate attempt to make up lost income?

If the status quo is not a likely alternative, the prospect of more regulation of agriculture definitely is. The more people realize that agriculture is a business, not a Jeffersonian image, the more agriculture can expect to be treated like any other business. Although most producers would find it hard to believe, agriculture is probably one of the least regulated major industries in America. And the case against regulation of farming practices is getting harder to make. If commodity programs are cut to the point where there is nothing to link environmental compliance to, you can be assured that the case will be lost and more regulation will become a fact of life for farmers -- at least for those who survive the double whammy of reduced income and more government control.

Compared to the alternatives, strong conservation incentives begin to look pretty good.

Let's move on to the third and final theme of the Green Evolution: increased attention to the special challenges faced by the significant segment of our agriculture industry that exists within commuting distance of cities -- the farms that come into closest contact with the majority of voters and taxpayers.

It may come as a surprise to you to learn that 58 percent of the total U.S. agricultural production comes from urban-fringe counties; those classified by the Census Bureau as metropolitan and those counties right next door. The concentration of agriculture around cities is even more pronounced in some of the nation's most strategic farming areas. In my home state of California, for example, 93 percent of all farm production, measured by gross sales, comes from these urban fringe counties. That so much of the nation's production is in this high conflict area should be of concern to us all.

Though a significant amount of urban-fringe farm production is fruit, vegetables and other specialty crops, an even greater proportion of it is not. Fifty percent of the amount the Commodity Credit Corporation loaned to producers of major commodities in 1987 went to producers in these counties in or adjacent to metropolitan areas. This has important implications for commodity program reform and for the approach we take to improving the environmental impact of farming; because the thing that really distinguishes urban-fringe agriculture is pressure from suburban development. If we cut the legs out from under those who farm on the fringe, by reducing support payments too rapidly, they will not simply be absorbed by larger producers as they would in rural areas. They will sell their land for subdivisions and shopping malls. The resource base -- particularly that strategic, unique specialty land -- will forever be lost. And the farmers who remain will be at the mercy of even more suburban neighbors, the ones who can outvote them and who pay the lion's share of the taxes.

Twelve years ago, the National Agricultural Lands Study, done by USDA and the Council on Environmental Quality, called attention to farmland conversion, claiming that 3 million acres a year were



being covered with concrete. More recent USDA estimates have revised that figure downward to about 2 million per year, which, as some agricultural economists point out, isn't a lot compared with the more than 300 million acres of cropland in this country.

But wholesale numbers don't tell the complete story. For example, they don't tell that much of the land being permanently lost from agriculture is prime and unique farmland, disproportionately located near cities because our ancestors settled on the best farmland and because productive climates are attractive places to live. The numbers also don't tell that for every acre developed, several more are "crippled" for agricultural production as a result of conflicts with neighboring subdivisions: crop damage and livestock predation, restrictions on pesticide use, increased risk of lawsuits, higher production costs and lower returns. The "right to farm" movement in this country is largely a response to the land use conflicts facing urban-fringe agriculture.

While America is not likely to run out of farmland because of urbanization anytime soon, a very significant and critical part of our agricultural system faces an uncertain future -- its sustainability in question -- because we have not paid enough attention to the distinct problems of farming on the urban fringe. Ironically, it is this part of American agriculture that is the most likely "ambassador" for the entire industry. The part that is most visible to, and whose farming practices and, indeed, very existence, have the greatest impact on, the majority of the American public.

It is here, on the urban fringe where we must begin the greening of agriculture. Where the farming community can most easily enlist the support of the general public precisely because they are neighbors. Where the concept of shared responsibility can



be most readily demonstrated. Where new conservation incentives will be most critical to the ability of agriculture to meet society's environmental expectations while remaining economically competitive. Where the benefits of a sustainable agriculture will affect the most Americans.

My own farm is one of those urban fringe farms. Located twenty five miles north of the Golden Gate Bridge -- yes, there are farms in Marin County -- we have had to learn to live in the shadow of suburbia. But in Marin we have been able to turn potential conflict into productive cooperation. The environmental groups of Marin have become powerful allies of the farm community. Among the values they hold dearly is the open space provided by the farms and ranches. And they have come to understand that viable, economically sound agriculture is the most efficient way to protect our county. To that end they have stood shoulder to shoulder with farmers and ranchers for the past twenty years, virtually assuring a 5-0 vote at the county board.

At the American Farmland Trust, we believe that the themes of sharing responsibility of stewardship between farmers and the public, a balanced approach to land stewardship with an emphasis on incentives, and protecting the most productive farmland from suburbanization will strike a responsive cord with the public. A response that will build new coalitions and a cooperative atmosphere for the next generation of farm policy. Thank you.

## STATEMENT OF THE AMERICAN FEDERATION OF GOVERNMENT EMPLOYEES

### Introduction

My name is Steve Hollis. I have worked as a Computer Specialist in the Farmers Home Administration-St. Louis Finance Office and Service Center since 1982. I have now been assigned to work with the USDA Info Share project to develop a common approach to information systems among the FmHA, RDA, ASCS, SCS, FCIC, and Extension Service.

For ten years, I also served as President of AFGE Local 3354. I now serve as Legislative and Political Action Director for our local AFGE Local 3354 is the largest Local Union within the Farmers Home Administration, USDA, representing over 700 of the 850 employees of the FmHA-St. Louis Office.

This statement will focus on USDA reorganization. I will also briefly comment on other important issues regarding FY 1994 appropriations.

The approximately 110,000 employees of the USDA not only serve farmers, but also rural housing needs, food safety and assistance programs, environmental concerns, and many others. We, the workers who are on the front lines of service delivery are ESSENTIAL to the success of these many, varied programs. We are also COMMITTED TO IMPROVING the quality and efficiency of our service delivery. The waste, abuse, and corruption which does exist in USDA comes primarily from the very purposeful mismanagement which has been installed during the Reagan-Bush years to dismantle and privatize our programs and services.

As a worker from our FmHA office in St. Louis states:

*"One of the reasons I like working for FmHA is because it gives me satisfaction to help people. I know that some of our programs are abused and others are administered badly, but that can be fixed if someone has the will to do it."*

## USDA Reorganization, with a focus on FmHA

### • The FmHA Strategic Business Plan

The FmHA Strategic Business Plan, developed during FY 1990, 1991, and 1992, under the direction of Roland R. Vautour, the former Under Secretary for Small Community and Rural Development, and La Verne Ausman, the former Administrator of FmHA, provides a clear summary of the previous administration's policies. Many of the objectives contained in this plan have already been implemented in the form of office closings, centralization and specialization of underwriting, appraisals, and review functions under the State Offices, and performance standards imposed on State, District, and County officials and employees.

This Strategic Business Plan is also currently being used as the basis for a multi-million dollar project to develop and implement an Information Systems Plan for FmHA computer systems. The policies underlying this plan are disastrous for rural Americans and USDA workers, and unless they are stopped now, and a new strategic direction is developed by the new administration, USDA reorganization will likely fail and many tax dollars will be wasted.

Through the Administrator's "Strategic Plan", FmHA workers are being forced to perform our work in such a way as to eliminate low and moderate income rural people from FmHA programs and to discourage their requests for assistance. When combined with dramatically reduced appropriations levels for direct loan programs, this has led to a reduced "case load" which has, in turn, been used as the criteria for closing offices. Office closings have made it impossible for low income people served to transfer their applications to the remaining offices. They are being lost from the system.

As an example, for several years, the Administration has mandated that 73 to 80% of all FP loan dollars obligated annually will be guaranteed. Because of this performance standard, combined with the low level of interest by the private sector in the FmHA guaranteed loan programs, State, County, and District personnel have been forced to use "any means necessary" to deny farmer applications for direct loans. Grassroots farmer advocates have consistently won appeals of these denials, but by the time the appeal process achieves a final decision overturning the denial of last year's operating loan, it is already time to apply for the new year's operating loan. The new application is again denied, and the cycle is repeated. As a result, even the much-reduced authorization levels for FP direct loans have not been 100% used, and many farmers have given up even applying for such loans. These results of this conscious administration policy are then fed back to Congress as justification for further reducing the appropriations levels for direct FP loans.

It is our very recent understanding that Secretary Espy has rescinded these numerical quotas for the current performance appraisal year ending June 30, 1993. We applaud that action, and hope that the Senate Appropriations Committee will help insure that the damage from the previous policy is undone.

### Downsize the Wasteful Contracting Out Appropriations

On the national level, AFGE has asked the new administration to conduct a thorough review and reform of contracting out practices as an alternative to attacking federal employee pay and benefits. We are seeking a 10% across-the-board cut in present contracting out levels, saving approximately \$40 billion over five years, and enabling Congress and the Administration to restore the proposed, unfair cuts in federal employee pay and benefits.

Second only to Farmer Program delinquencies, FmHA's Information Systems procurement and contracting has been the most highly visible and controversial subject. FmHA mismanagement of a contracted-out effort to totally revamp our automated systems during the late 1970s, known as UMIS, has been cited in Information Systems textbooks as one of the classic examples of how NOT to manage information systems acquisition. During the 1980s, a comparable mismanaged contract was for the development of AMAS (the Automated Multi-Family Housing Accounting System). AMAS was supposed to be a "turn-key" system, provided by a contractor paid millions of dollars, but in fact was "A MESS", which has required the valiant efforts of nearly 1/5 of the total FmHA/TSM staff to fix, maintain, and enhance since it was implemented in 1985.

Additional problems with contracting out in USDA/FmHA include the following:

- Contracting out for services must either cost more, or yield lower quality work, or both, because it builds in the profit motive of the contracting firm.

A County Supervisor from Mississippi states:

*"Some contracting for services which FmHA can't handle otherwise or where there is a shortage of employees is good. Some areas of contracting, however, had led to great increases in costs. One of these areas is contracting for repair on inventory houses. Previously, we made subsequent loans for the needed repairs. Now since we contract for them, the costs have doubled and tripled. This is due in part to lack of competition, because our solicitation forms are so complicated and partly because contractor feel the government can pay more. If we were making subsequent loans like we used to then the contractors felt they were working for the homeowner and did not charge as much."*

And a County Program Assistant from Tahoka, Texas, cites the following:

*"The supervisor needs an assistant to run the office without the stress of doing it alone. I don't understand why we pay contract help around \$21.00 an hour to work and service loans when an assistant supervisor would be more effective and feasible."*

- Working with contractors takes almost as much, sometimes more, of our time that doing the job ourselves.

An employee who works on the MFH program reported that RRH appraisals can be done faster, and better, in house. Soliciting for bid and reviewing contractor deliverables takes almost as much time as doing it ourselves. The contract says the appraisal must be done in 45 days, and usually we get it on about the 50th day, after several phone calls. After all that time, the deliverable is often unacceptable, and we must go back to the contractor to have them do it again. Meanwhile, a low-income housing project is being delayed. This process can't be cost effective.

- Contractor work is often of poor quality.

In addition to the above examples, a County Supervisor from New York reports:

*"Contracting to me has meant nothing more than accepting lower quality at higher cost. With the exception of farm appraisal, my experience has been negative. The stringent requirements to use realtors and contract out work has been terribly inefficient and expensive. The quality is gone, the heart of the FmHA worker is missing. I have personally had two cases of my contractor being incarcerated while the contract was still in effect."*

Contracting out should be the last resort instead of the first alternative! @CHAPTER# = The Rural Development Administration

If the new administration wants to send a message that government bureaucracy is going to be strangled from the top down, instead of cutting the front-line workers at the bottom — and if the Congressional Agriculture Committees are going to eventually approve plans to consolidate some USDA

agencies -- the dissolution of RDA could well be the best place to start. Thus far establishment of the RDA has only resulted in the creation of more offices, transfer of bureaucrats, and upheaval.

Worse! Subtitle B established a five state demonstration for State Economic Development Review Panels. Under this demonstration, representatives of special interests will be permitted to recommend allocations of federal funds which will override normal appropriations processes. The law requires little federal oversight of this process.

During the National Family Farm Coalition Annual Meeting, December 11-13, 1992, the Idaho Rural Council reported that they had attended, and sought to participate, in the RDA "development council" for their region. They were informed that there was no interest in farming in the RDA concept of "rural development. They reported that the council discussion centered on how to reduce local environmental regulations to make it easier to attract minimum wage businesses and corporate livestock factories.

Not only does the RDA represent an irresponsible fiscal and bureaucratic nightmare in this era of streamlining government, the whole approach to rural development is fatally flawed. The real base of the rural economy is family farming. A farmer from Wisconsin gave the following factual account of a situation in that state.

*"The rural development interests proposed to build a hog factory. The factory would employ 6 people to handle 1200 sows with a total payroll of \$150,000 annually. In the first place, this meant that five of the six workers would still have incomes below the poverty level. More important, the factory would displace 21 family farmers. County statistics in that area show that, on average, a family farmer spends \$209,000 in the local community per year. The net loss of income to the local community would be \$4,239,000!"*

### Not So Fast! On USDA Reorganization.

Through our National Union Office, we are currently attempting to establish a national-level consultative process with Secretary Espy and the new USDA administration. If we are allowed to do so, we will be more than happy to work with USDA management, line by line in the detailed budget process, to identify positive ways to cut wasteful expenditures to achieve the budget savings projected by the President and OMB, while working with the new USDA management to "reinvent" USDA in a way that makes sense, not just to save \$1 billion in the budget book.

However, we are taxpayers and voters too, and this is a MAJOR reorganization with far-reaching policy implications. The essence of American democracy and its checks and balances is that Congress holds the purse strings. We ask your committee to use this "power of the purse strings" to insure that USDA reorganization is planned and implemented using the following terms and conditions:

- Mechanisms are established to insure that USDA workers and clients are consulted prior to reorganizing or downsizing the USDA field office structure. We have heard that Secretary Espy is interested in developing some sort of "farmer advisors". We believe this concept should be expanded to establish some sort of ongoing "Advisory Councils" comprised of clients, representatives from nonprofit organizations with on-the-ground experience with USDA programs, and including elected federal employee representatives, to review and assess past problems with program delivery, including the USDA organizational structure, training and outreach programs. Such councils should be consulted in planning new directions in both policy and organizational implementation; and then, to monitor the effectiveness of rural housing, farming, and community development programs and program delivery and make recommendations to both USDA and the Congress.

Through such "Total Quality Management" steps which clearly show that, once again, customer satisfaction is a priority at USDA, the appropriate groundwork could be laid for possible agency consolidations.

- Using these advisory councils and other means, USDA should reassess the impacts of a NAFTA or GATT agreement on family farmers using realistic expectations instead of overly optimistic calculations. The number of jobs lost in farming and related small businesses needs to be analyzed with the ripple impacts on the health of our rural communities. The impacts on producers in the other nations needs to be assessed as well. This type of analysis really needs to be done before Congress votes on these trade agreements, and before major USDA policy and organizational decisions are made by the new administration.
- Using these advisory councils and other means, the new administration should review the strategic business plans of FmHA and other USDA agencies and develop new strategic plans which reflect the policy directions which the new administration proposes to take before undertaking



reorganization. This should include a real hard look at the cost effectiveness and implications for the rural economy of the RDA.

- Using these advisory councils and other means, the new administration should conduct and present to you a thorough review of USDA's wasteful and ineffective contracting out program. Cuts should come first here before downsizing the workforce or the S&E monies which support that government staff.
- USDA reorganization should maintain and strengthen agencies with programs of assistance for rural economic development and environmental protection — targeting low to moderate income rural Americans and community-based development, including housing, community facilities, small to medium-sized farms, businesses, cooperatives, and community-based lending institutions — with a delivery system that maintains locally dispersed (State, District, County) offices. It is probable that some existing USDA agencies should be consolidated, or at least co-located where they are not. However, what is crucial is:
  - a) the provision of a coordinated and comprehensive program of assistance for rural development from the bottom up;
  - b) a rural field delivery structure that provides the maximum possible direct people-to-people, hands-on, assistance to low to moderate income rural people in making the most of the opportunities provided by the programs; and
  - c) maintaining, and rebuilding as necessary, the current staffing levels of non-supervisory, front-line workers, while reducing the unnecessary and counter-productive numbers of supervisors and managers as well as reducing waste and abuse in contracting out.

A County Supervisor from Calhoun County, Mississippi, puts it like this:

*"I have worked for FmHA for 22 years and have always felt that FmHA had the best delivery service for programs designed to help needy people. The consolidation and reorganization is not going to serve these people very well. There have been many cases over the years that I have been in Calhoun County where we have delivered loan papers for people to sign because they were aged, sick or had no way to get to our office. This kind of service will be lost if large so called 'super offices' are established. The hands on approach will be gone and the truly needy people will fall through the cracks of assistance available, because they will be unable to travel long distances to obtain this assistance."*

## Other FY 1994 Appropriations Issues

The most important issue is to raise farm income by increasing farm gate prices using the commodity loan program. The dual goals of the new administration to achieve both deficit reduction and economic growth make it imperative for this Subcommittee to initiate a reevaluation of the commodity loan program. When commodity loan rates were at "parity" levels and supply management was used, up to the early 1950s, farm programs actually yielded net income to the Treasury. As commodity loan rates have forced market prices down, welfare-like deficiency payments to make up some of the marketplace loss have been put in place of government regulation of the market through supply management.

### RECOMMENDATION:

*Investigate the true costs of farm programs when examining areas of the budget that could be cut while not further reducing the record low farm income levels of producers. This includes fair analysis of the impact of increasing commodity loan rates and target prices to meet needs instead of the politically charged OMB analysis of the past twelve years. An analysis should also be made of the true budget costs of the Export Enhancement Program (EEP) and the Dairy Export Incentive Program (DEIP), including the impact on farm income and the impact on grain companies or processors that are involved in negotiating the deals.*

If properly understood, reduction of deficiency payments by raising the commodity loan rate to cover the cost of production would be the best means for financing the needed increases in direct farm ownership and operating loans.

We are very pleased to hear that the administration's budget proposes to fully fund the Section 2501 authorization of \$10 million for outreach and education programs to minority farmers. This money is intended to go directly into the hands of field people who work in a hands-on way with minority farmers and rural people to get applications in to FmHA and other government programs, to work on appeals in relation to FmHA and other government programs, to set up cooperatives, etc. For example, the efforts of the Federation of Southern Cooperatives, in south Georgia alone, have been able to help as many as 600 minority farmers stay in farming in the past. We urge the Subcommittee to support this item.

AMERICAN INSTITUTE OF NUTRITION AND AMERICAN SOCIETY  
FOR CLINICAL NUTRITION

STATEMENT OF BUFORD L. NICHOLS, DIRECTOR, CHILDREN'S  
NUTRITION RESEARCH CENTER, BAYLOR COLLEGE OF MEDICINE

I am Dr. Buford Nichols, Director of the Children's Nutrition Research Center at the Baylor College of Medicine in Houston, Texas. I thank the committee for its support of nutrition research and for the opportunity to speak on that subject today.

I am testifying on behalf of the American Institute of Nutrition (AIN) and the American Society for Clinical Nutrition (ASCN). These organizations consists of about 3,000 nutrition researchers from nearly every major research, education and clinical institution in the United States. This testimony has been endorsed by the American Dietetic Association (ADA) and the Society for Nutrition Education (SNE).

Nutrition research sponsored by the Department of Agriculture consists of investigations of interactions of foods with the genetic potential of consumers. By understanding the mechanisms of food-genome interactions, the government is better able to provide critical information for continued improvement of human diets. The research must also incorporate the broad scope of age and risk factor distributions in the U.S. population.

Dietary guidelines for the American public are carried forth in publications like "Nutrition and Your Health: Dietary Guidelines for Americans" published by the USDA and the Department of Health and Human Services (HHS). These guidelines are based on a thorough evaluation of current scientific evidence which links food intake and the risk of developing several diseases. There is an urgent need for comprehensive research into the biological basis of the Dietary Guidelines. This would lead to future refinements of the Guidelines that will improve dietary practices and health maintenance, and reduce the incidence of obesity, diabetes, hypertension, heart disease, cancer, and a host of other health-related problems. It is within this context that the American Institute of Nutrition makes specific appropriation recommendations.

Cooperative State Research Service (CSRS):

**The AIN and ASCN request that the Committee provide \$25 million for Nutrition, Food Quality and Health research under the National Research Initiative (NRI) at the USDA Cooperative State Research Service (CSRS).** This request is consistent with the NRI authorization in the 1990 Farm Bill.

In his plan *A Vision of Change for America*, President Clinton recognizes the benefits of investing in agricultural research and calls for \$188 million in increases in the NRI over the next four years. Though the proposed increases are modest for FY 1994, AIN and ASCN support the President's commitment to the NRI.

The NRI supports vital research through the competitive peer-review process which is designed to fill existing gaps in our knowledge. Peer-review is considered to be the most effective selection process because proposals are rated by other scientists who can objectively evaluate the nature of the research and the contribution its results will make to the existing base of knowledge and human welfare.

Although it is important that all six areas of the NRI get adequate funding, we are particularly concerned about the small number of individual grants in the Nutrition, Food Quality and Health sector.

In FY 1992, the NRI was able to fund little more than one out of every four (51 of 185) nutrition and food safety grant applications received, and funding of individual grants was for only about half the amounts requested. This success rate and level of funding is among the most competitive of any national government research funding agency. Only a few of the best proposals are funded, while many good proposals are not.

In 1992, NRI-supported research on human nutrition included studies on:

- Dietary Fiber in Blood Pressure Regulation
- Calcium Requirements for Adolescent Females
- Manganese requirement in Elderly Women
- The Vitamin K Status of the Breast-feeding Infant Beyond the Newborn Period.

While these and other studies add to the base of knowledge on human nutrition, many of the questions go unanswered because the \$6.5 million provided in FY 1992 and FY 1993 were woefully inadequate. The AIN and ASCN recommended level of \$25 million for FY 1994 would provide the needed support better access to new nutritional knowledge.

#### Agriculture Research Service (ARS):

The ARS Human Nutrition Centers are the primary federal programs for issues related to normal nutrition and should be funded at the administration's recommended levels. The ARS also provides funding for the food animal gene mapping program. **We encourage the committee to increase the funding by \$25 million.**

#### Other USDA Programs:

We recognized the importance of putting the fruits of research into practice and support the administration's efforts to increase the effectiveness of nutrition education through other USDA programs. The Administration has proposed increased funding for several nutrition related programs such as the **Women, Infants and Children (WIC)** program which includes a Nutrition Education Component. This program is important to the effort to provide the public with sound nutritional guidance.

AIN and ASCN would also like to endorse the efforts of the **Coalition on Funding Agriculture Research Missions (CoFARM)**, a coalition of science and professional societies that supports all agricultural research. The AIN and ASCN urge the committee to support strong funding for research on natural resources, plant and animal systems, and value-added processing. The links between nutrition research and other agriculture areas need to be supported in order continue to provide the country with a safe, affordable, nutritious food supply.

#### Conclusion:

An estimated 23 percent of the U.S. gross national product is from food and agriculture activities, but less than \$500 million is spent on nutrition research annually. AIN and ASCN propose increases in the number and size of CSRS competitive nutrition research grants and continued support for ARS nutrition research centers in order to bring modern biological science to bear on problems of human nutrition.

The biological foundation for dietary guidelines must be established before food and agricultural policies can be adequately formulated. We need your support for our basic and applied human investigations. We ask that you consider favorably our recommendation for increased funding for the specific USDA research initiatives described. Thank you.



## STATEMENT OF THE AMERICAN SHEEP INDUSTRY ASSOCIATION

The American Sheep Industry Association (ASI) is a federation of state member associations representing over 100,000 sheep producers in the United States. The sheep industry views numerous agencies and programs of the U.S. Department of Agriculture as very important to lamb and wool production.

ASI strongly supports the Wool and Mohair Incentive programs of the National Wool Act of 1954, which encourage production and marketing of high quality domestic wool and mohair at prices fair to both producers and consumers. The National Wool Act, through incentive payments to producers, contributes to financial stability which is vital to the sheep industry and the economic health of rural America. The National Wool Act is also key to the sheep industry's ability to contribute \$6.7 billion through retail to our nation's economy annually. It is important to note that the incentive payments to producers since 1954 total less than one-third of the tariffs collected on imported wool and woolen products.

ASI appreciates this opportunity to comment on those portions of the USDA FY 1994 budget which are vital to our industry.

### Scrapie

Adequate funding of the Voluntary Scrapie Flock Certification Program through USDA-APHIS is of critical importance to the sheep industry as well as all segments of the livestock industries. ASI appreciates this Subcommittee's efforts in recognizing the seriousness of this devastating disease and the real need for control and eradication.

The Scrapie Flock Certification Program initiated in October 2, 1992, is being widely accepted by producers in most states. However, it is dramatically under-funded. Sheep producers are now paying over 50% of the total cost of the program. If it is adequately funded in these crucial early years, federal funding should decrease to approximately 2% of the total program cost by the year 2000.

ASI strongly supports the Administration's budget amount of \$3.5 million for FY 1994 for the USDA/APHIS Flock Certification Program. The industry's request for appropriations to fully fund the program is \$4.8 million.

### Animal Damage Control

The Animal Damage Control (ADC) program of USDA-APHIS is vital to the economic survival of the sheep industry. Our organization strongly supports the funding for ADC to at least the level recommended in the President's budget of \$26.2 million for FY 1994.

Additionally, ASI urges the Subcommittee to appropriate a \$4.8 million increase in ADC funding to meet the costs complying with the National Environmental Protection Act requirements. ADC has assumed the responsibility for NEPA compliance on ADC from the USDA Forest Service. NEPA compliance is a high priority in conducting federal animal damage control on private and public lands and ASI strongly supports adequate funding to meet the requirements. Non-compliance and subsequent loss of ADC is a tremendous cost to sheep producers in predator loss of sheep.

The ADC program is an important and necessary government service. The purposes of the program are to control wildlife and pest damage to agriculture, other wildlife, aquaculture, forest, range and other natural resources; to protect public health and safety through control of wildlife-borne disease; and to control wildlife at airports. Many sectors of agriculture, wildlife management and public health and safety rely heavily on the ADC program. These services are provided through a partnership between Federal, state and private interests.

Research in animal damage control is also important to the sheep industry. The long term ability to protect livestock depends on development of effective control methods to be accomplished through adequately funded research programs. We support funding for research in this area of at least the FY 1993 amount.

#### Foreign Agricultural Service (FAS)

The sheep industry participates in FAS programs such as the Market Promotion Program (MPP), GSM-102 and GSM-103 export credits and the Foreign Market Development Program. ASI strongly supports continued appropriations for these critical Foreign Agricultural Service programs at the FY 1993 level. ASI is the cooperator for American wool and has achieved remarkable success in increasing exports of domestic wool. American lamb sales also benefit from the Foreign Market Development Program though increased international efforts.

#### Lamb Market Information and Price Discovery Systems

The sheep industry strongly supports continued appropriations for USDA-Agricultural Marketing Service, and the National Agricultural Statistics Service to proceed with market information and price discovery systems for lamb at the FY 1993 levels.

#### Soil Conservation Service

ASI urges increased appropriations for the range programs of the Service to benefit the private range and pasture lands of the United States with conservation assistance.

### RESEARCH AND EDUCATION

The sheep industry recognizes that it must be globally competitive, profitable and sustainable as a user of and contributor to our natural resource base; that production and processing practices must be environmentally sound, socially acceptable and contribute to the goals and overall well-being of families and communities. It is therefore essential that an integrated systems approach be used focusing on problem-oriented programs utilizing interdisciplinary team efforts. These efforts should be applied both to plan and to conduct research on complex problems as well as to apply problem-solving technologies on farms and ranches in educational programs.

#### Cooperative State Research Service (CSRS)

ASI supports the National Research Initiative (NRI) and requests appropriations of at least \$130.195 million (the administration's combined funding request for the regular budget and for investment through the Economic Stimulus Package). We specifically request that the "Animal Systems" and the "Markets, Trade and Policy" sections receive a higher priority and thus a higher percentage of NRI funding. ASI also believes that the overall CSRS competitive grants should be strengthened and we support the administration of the NRI funds through the CSRS competitive grants system.

ASI supports funding of the Animal Health and Disease Programs and we urge the committee to restore this funding to at least the FY 93 level of \$5.551 million.

As noted earlier, maintenance and enhancement of environmental quality is a high priority of the public as well as of the livestock industry and the sheep industry in particular. The vast majority of the western public rangelands are arid ecosystems. They are also the primary generator of the region's most precious natural resource--water. The scientific literature generally indicates that sheep grazing on watershed and riparian areas are not detrimental and, in fact, may be beneficial; however, long term properly designed studies have not been done. Economical systems of grazing national rangelands are essential to the viability of the sheep industry since approximately 37% of the nation's sheep are grazed on these lands. As the public deliberates on legal issues regarding water quality, multiple use and biodiversity of public

rangelands, it is essential that everyone enter these discussions with the best scientific information possible.

ASI requests that \$500,000 be appropriated through a CSRS targeted special grant for a six-year study to measure and document the effects of sheep and cattle grazing on riparian and water shed areas. We propose that the project be a collaborative effort between CSRS through Montana State University and ARS through the U.S. Sheep Experiment Station at Dubois, Idaho. The study would be conducted on 17 sections of ARS managed U.S. Sheep Experiment Station summer rangelands located in the Centennial Mountains in Beaverhead County, Montana, along Odell and Tom's Creeks. ASI will pledge \$200,000 of producer funded support and ARS has pledged \$300,000 of redirected funds toward the project for a total project cost of \$1 million.

The on-going research in Wool is critically important to the sheep industry. ASI supports continued funding of \$250,000 for FY 1994 through the special grants program of the CSRS.

#### Agriculture Research Service (ARS)

There continues to be a wide disparity between plant and animal science funded research in ARS. We encourage the committee to correct this inequity by adding new initiatives to the Animal Science research program.

ASI recommends continued support of the Scrapie/BSE research initiatives at Pullman, Washington and Ames, Iowa.

ASI recognizes the need for a large animal necropsy and incinerator facility at the National Animal Disease Center in Ames, Iowa and we urge the committee to appropriate \$3.9 million to build the unit.

#### Extension Service (ES)

In being consistent with "FAIR-95" priorities and the sheep industry's stated belief that for the livestock industry to be globally competitive and sustainable, we must implement educational programs that employ an interdisciplinary, integrated systems approach to problem solving through Integrated Resource Management (IRM) as is outlined in Chapter 2 - IMS. ASI urges funding of Integrated Management System (IMS) program as outlined in the 1990 Farm Bill Subtitle B; Sustainable Agriculture Research and Education; Chapter 2 - Integrated Management Systems, Section 1627 at the level of \$3 million, as is proposed in the administration's budget.

ASI also supports funding Chapter 3, Sustainable Agriculture Technology Development and Transfer Program title XVI, Subtitle B, contingent on the funding for Chapter 2.

## STATEMENT OF THE AMERICAN SOCIETY FOR MICROBIOLOGY

The American Society for Microbiology (ASM) wishes to submit the following statement for the record on the fiscal year (FY) 1994 budget for the United States Department of Agriculture. The ASM is the largest, single biological sciences organization in the world, with over 39,000 members. Many of these individuals are actively engaged in research activities related to agriculture. Most of our members are scientists who work in universities, industry and government institutions.

The research activities of our members have contributed to the generation and more efficient production of agricultural products using biotechnology and classical techniques to enhance the quality of life of all citizens. In addition, our members wish to ensure the continued safety of agricultural products. The ASM has offered our scientific expertise to the USDA regarding the microbiological safety of foods in view of the recent *Escherichia coli* outbreak on the West Coast. We would like to comment on the resources required by the USDA in FY 1994 to accomplish its mission and enable the USDA to fulfill its congressional mandate. Although, we recognize the severe budget constraints Congress faces this year, we believe an investment in agricultural research is an investment in the future economy of the nation. Our comments are directed to specific areas of the USDA budget: the National Research Initiative (NRI), Higher Education Grants, the Agricultural Research Service (ARS), the Food Safety Inspection Service (FSIS), and the Animal Care program within the Animal Plant Health Inspection Service (APHIS).

## Past Funding Practices for Competitive Fundamental Research Programs

Fundamental agricultural research has been severely underfunded for the past 30 years. Beginning in 1978, the forerunner of the NRI, the Competitive Research Grants Office (CRGO), was first funded. Congress authorized \$40 million for fundamental research in agriculture and \$14.4 million was appropriated for FY 1978. Increases in funding were appropriated for the new programs within the NRI. However, if the OMB-GNP deflators are taken into account to convert the levels of funding for any one year between 1978 and 1993, it is apparent that these fundamental programs have never been funded at the level of \$40 million authorized in 1978.

The budgetary increases for the original CRGO program supported research to gain fundamental knowledge of plant and animal systems and made it possible to capitalize on research from the NIH and NSF which led to many of the biotechnology breakthroughs. However, the agricultural research programs lag far behind the programs in medicine because we do not have the same level of knowledge about plants and animals important in agriculture that we have about man or organisms important in medicine. The challenge in agriculture is more difficult than in medicine because the number of important animals, plants and microorganisms that must be studied is far greater. Also, the products or commodities generated from agricultural research do not command as high a price as medical developments. This dictates that the agricultural research system must be more efficient and requires additional knowledge. The NRI is a plan to obtain that knowledge.

The NRI is an important program which provides the basic information that is absolutely essential if the United States is to maintain its preeminent position as the world leader in agriculture. Jobs related to agriculture can be preserved only if the United States maintains its position as an efficient, environmentally sound, producer and exporter of safe, nutritious food. The NRI has integrated prior research programs with six new additional program areas recommended by the National Research Council's (NRC) Board of Agriculture (BOA) in "Investing in Research: A Proposal to Strengthen the Agricultural, Food and Environment System". The NRI is a program that was generated by agricultural scientists and strongly endorsed by Congress in the 1990 Farm Bill when \$500 million was authorized for the program.

When the NRI was authorized in 1990, it was recognized that the six research areas recommended by the NRC BOA could only be accomplished in a timely fashion when the program was fully funded at the authorized level of \$500 million. The program was recommended to start at \$150 million in FY 1991, and increased at the rate of \$50 million each year. If that schedule had been followed, the appropriation for FY 1994 would be \$300 million. The need and the potential of the program are more relevant today than when it was instituted in 1990.

**Recommendation for FY 1994 for the National Research Initiative:** We recommend that the NRI be funded at a level of \$213 million for FY 1994. The NRI has stimulated scientists to propose new approaches to solving problems in agriculture. This is evidenced by the large number of proposals submitted to the program and the high quality of the proposals. The basis of the request is that in FY 1992 (the last year for which data is available) the average rate of support by the NRI was approximately \$57,700/yr. for 2.2 years. In contrast, NIH grants are funded, on average, at a level of \$206,700/yr. for 4 years. The NSF funds grants, on average, at a level of \$86,000/yr. These figures illustrate the disparity in the funding of agricultural research as compared to other agencies. The techniques that are used are the same and therefore the equipment that is used and the training of the individuals doing the research must



be equivalent. The disparity in funding agricultural research requires correction. We recommend that the average award per year for agricultural competitive grants be increased to \$70,000/yr. and that the awards average three years. The calculations and additions to each of the program areas within the NRI are in Table 1.

We recommend that the NRI be funded at a level of \$213 million for FY 1994: Although this level of funding does not grant agricultural research funding parity with research supported by NIH or NSF, it does begin to provide a more reasonable balance.

As part of our recommendation of \$213 million for FY 1994, we recommend very strongly that a portion of the funds (\$18.4 million) be allocated for scientific instrumentation. The size of the NRI awards precludes these funds from being used to purchase sophisticated expensive scientific equipment that is needed to complete research projects in a timely efficient manner. The NRI has delineated new goals and directions. The attainment of these goals requires modern instrumentation. Many of the instruments used on biotechnology projects are very costly ranging from \$65,000 to \$125,000. The instrumentation grants should be administered through the NRI and be peer reviewed. The basis for instrument awards should be the need and demand for the equipment, the scientific competence of the investigator and the relationship of the use of the equipment to the goals of the project areas within the NRI. There should not be a prerequisite that the investigator be funded by USDA.

Also, as part of our recommendation of \$213 million for FY 1994, we recommend strongly that a portion of the funds (\$20 million) be allocated solely for food safety. This amount is in addition to that allocated for current programs within the NRI, eg. Nutrition Food Quality and Health. The recent outbreaks in the Northwest have emphasized the need for research in food safety. This area of research has been essentially neglected for the entire history of competitive grants program and has received minimal funding. We are in a global food economy with increased imports and exports of food and emphasis in cutting costs of food production. It is an era in which the population is increasing, causing overcrowding and poor sanitation. Additionally, the number of immunologically compromised individuals is high. These conditions provide an environment for food spoilage and food disease organisms. Fundamental research is needed to provide the data for coping with present and future problems in food safety.

We also recommend that the NRI remain science driven. We believe that the NRI should be separated from the Cooperative State Research Service and be given equal administrative status with CSRS and ARS, as originally proposed by the Board of Agriculture. Independent administration of the program is necessary to insure that the program remains science driven.

**Higher Education:** Higher Education Grants were funded at \$7.8 million for FY 1993. The Administration requested \$9 million for FY 1994. We support the Administration's request of \$9 million for FY 1994 (Table 2).

**Agricultural Research Service:** We recommend that ARS be funded in FY 1994 at a level of \$793 million (FY 1993 was \$740.4 million). The Administration's request of \$708 million is not adequate for the needs of ARS. The FY 1993 budget was not sufficient to cover pay raises for ARS personnel. The ARS lost scientists this past year and will lose even more scientists with a flat operating budget in FY 1994. It is our understanding that a flat budget dictates that all temporary help will be terminated. The temporary help are usually younger scientists and technicians who bring new skills to the agency. Flat ARS budgets will cause the ARS to have a low technician to scientist ratio that is inefficient. An increase in the ARS budget is needed to meet current research needs. Funds are needed to upgrade ARS facilities. We are aware that this committee has supported the upgrading of ARS facilities in the past and we encourage you to continue this necessary effort.

**APHIS Animal Welfare:** We recommend that the animal care program within APHIS be funded at \$15 million in FY 1994. The \$9.7 million recommended by the Administration is not sufficient for APHIS to carry out its legal mandate. Recently, the courts have ruled that facilities housing rats and other small animals must be inspected. Additionally, it is necessary that APHIS be in a position to verify that it has conducted adequate and timely inspections of research facilities to allay public concern.

**FSIS Food Safety and Inspection Service:** We concur with the Administration's request for \$8 million for research on food safety methodology.

**SUMMARY:** The American Society for Microbiology recommends that the programs at the USDA be funded at the following levels for Fiscal Year 1994:

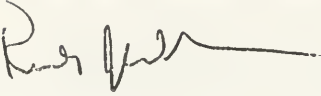
\$213 million be appropriated for the NRI

\$9.0 million be appropriated for Higher Education Grants

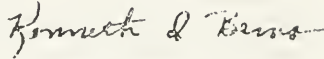
\$793 million be appropriated for ARS

\$15 million be appropriated for the Animal Care program in APHIS.

Sincerely,



Rudy J. Wodzinski, Ph.D.  
Chairman, Committee on Agricultural,  
Food and Industrial Microbiology,  
Public and Scientific Affairs Board,  
American Society For Microbiology



Kenneth I. Berns, MD., Ph.D.  
Chairman, Public and Scientific  
Affairs Board, American  
Society For Microbiology

Table 1 Recommended Funding Levels for the NRI to Increase Individual Grants Compared to the Average NSF grant\*

	No. of Proposals	No. of Award	Success Rate	\$ Amt. Request x 1000	\$ Amt. Awarded x 1000	Avg. Award* \$	FY 1994 Rec. For 3 Yr. grants \$70,000/y x 1000	Inc. \$ Req. \$ x 1000
Natural Resources & Environment	309	143	28.00%	92,290	17,008	118,037	30,030	13,022
Nutrition Food Quality & Health	189	51	27.57%	49,870	6,342	120,451	10,710	4,568
Animal Systems	614	136	25.41%	144,954	23,422	151,423	32,760	9,158
Plant Systems	1069	359	35.58%	252,304	37,795	105,279	75,100	37,585
Markets Trade and Policy	185	41	21.03%	35,980	3,792	92,468	8,610	4,618
Processing for Added Value or Developing New Products	145	29	20.28%	50,700	3,780	130,345	6,090	2,310
Others				9,013				
Sub Total	2715	779	27.00%	589,315	92,139	126,898	165,580	71,451
Food Safety							20,000	20,000
10% for Equipment							18,359	18,359
Subtotal							201,949	108,810
* Does not include administrative costs								
Total							213,056	115,850

Average term of grant 2.3 years

TABLE 2. ASM RECOMMENDATIONS FOR FUNDING LEVELS FOR THE USDA FOR FY 1994

FY 1993 Appropriation	FY 94 President's Request	ASM Rec.	
	Millions	Millions	Millions
National Research Initiative-Total**	97.5	130.2	213.06
Natural Resources & Environment	18	26	30.03
Nutrition & Food Quality	6.5	13	30.71*
Animal Systems	25	30	32.76
Plant Systems	40	45.2	75.39
Markets Trade & Policy	4	7	8.61
Processing for Added Value or Developing New Products	4	9	6.09
Scientific Equipment	0	0	18.36
Higher Education	7.8	9.0	15.0
Agricultural Research Service	740.4	702	793
APHIS (Animal Care)	9.5	9.7	15
FSIS (Food Safety Methodology)	0	8	8

\* \$20 million supplement is needed for food safety. \*\* Does not include administrative costs.



## AMORIENT AQUAFARM INCORPORATED

STATEMENT OF DR. LINDEN BURZELL, VICE PRESIDENT AND  
GENERAL MANAGER

Mr. Chairman and Members of the Subcommittee,

Thank you for allowing me to submit testimony on behalf of the Center for Tropical and Subtropical Aquaculture, or CTSA. I am Linden Burzell, Vice President and General Manager of Amorient Aquafarm in Kahuku, Hawaii. I have also had the privilege of serving as chairman of the center's Industry Advisory Council for the past six years.

As a businessman and scientist, I appreciate the Center's distinct role as a link uniting industry and research to work toward the common goal of developing an economically sound tropical and subtropical aquaculture industry. The Center's recognition of the need to integrate industry priorities and scientific research ensures that its program directly serves commercial producers.

In 1991, U.S. edible seafood exports rose to 2 billion pounds, a 6 percent increase. Despite that, the United States is still a net importer of seafood: imports rose 8 percent in 1991, creating a trade deficit of \$2.6 billion. Thus the aquaculture industry -- already the fastest-growing segment of agriculture -- holds enormous potential for expansion that is, as yet, largely unrealized.

As aquaculture grows, it will not only provide a reliable, safe source of high quality protein for the American diet, but it will also create new jobs and generate tax revenues, thereby strengthening the economy. However, like any industry in its infancy, aquaculture requires support and nurture to reach its full potential.

During my six years as chairman of the Center's Industry Advisory Council, I have seen the Center provide that vital support. Commercial producers are asked to define industry problems, and then the region's scientific expertise is tapped to conduct research that will solve those problems. The solutions have taken a number of different routes, including education, training, technology transfer, addressing disease issues and government regulations, marketing and economics, and revitalizing or initiating aquaculture activity throughout the Pacific. Most importantly, each route was delineated in direct response to an industry need and tailored to an industry priority.

Although the Center's research projects have only been underway for one to five years, they have already extended enormous benefits to commercial producers in the region and throughout the nation.

For example, a Center-funded project to identify and test drugs for treating diseases in shrimp hatcheries offered the whole domestic shrimp culture industry tremendous benefits. In 1991, the Food and Drug Administration approved the specific use of Formalin in shrimp nursery and grow-out systems. The quantity of imported shrimp rose 15 percent over the first six months of 1992. The approval of Formalin will help to even the playing field for the domestic shrimp industry and foreign shrimp growers, who do not face such stiff regulation regarding drug use.

A project to study aquaculture effluent discharge -- regulation of which poses a major obstacle to industry development -- has established a base of knowledge regarding effluent characteristics and potential environmental impacts in Hawaii. The Center is now initiating a joint effort with the other regional aquaculture centers to document effluent characteristics in other parts of the country and to improve the permitting process for aquaculture effluent discharge.

A project titled "Pacific Regional Aquaculture Information Service" ensures that even individuals in remote locations have easy access to the latest research materials on all phases of aquaculture. The value of this service to commercial producers, extension agents and scientists is shown by a 50 percent increase in the number of users in the last six-month period of the project.

Such progress in so short a time clearly illustrates that the singular, industry-focused approach taken by the regional aquaculture centers offers rapid, effective results. The investment in the regional aquaculture centers has yielded high returns thus far and will continue to do so. Expanding the Center's current program and capabilities would provide even greater yields. I therefore request that you approve the authorized full funding of \$7.5 million for the regional aquaculture centers program.

Thank you again for the opportunity to testify before you.

## ARKANSAS ENTERPRISE GROUP

### STATEMENT OF BRIAN KELLEY, VICE PRESIDENT

Thank you, Senator Bumpers, and members of the Subcommittee for allowing me to testify today. I am here to request Congressional matching funds for a targeted \$2 million private-public partnership business development effort in the economically depressed region of the Arkansas Delta that will create 200 jobs and \$20 million in personal income over a ten year period. Of all rural areas, the Delta is arguably the poorest region in the country, and the need for business and job creation is growing each day. As a nation, we must find ways to create viable rural economies so that the jobless will not continue to flee to the urban centers. The Arkansas Enterprise Group (AEG) has successfully demonstrated that it can meet the challenge of creating businesses enterprises and jobs in low income communities.

#### **The Project: The Arkansas Delta Public/Private Business Development Loan Fund**

I am here today to ask the subcommittee to provide 50% (\$1 million) of a \$2 million dollar public/private loan fund aimed at growing businesses and employment in the Arkansas Delta. AEG's five years and \$6.5 million worth of experience in rural development indicates that this Congressional allocation will create 200 jobs. Over a ten year period, every \$1 dollar you allocate to this loan fund, will generate at least \$20 in personal income. I assert that 1:20 is not a bad leverage ratio!

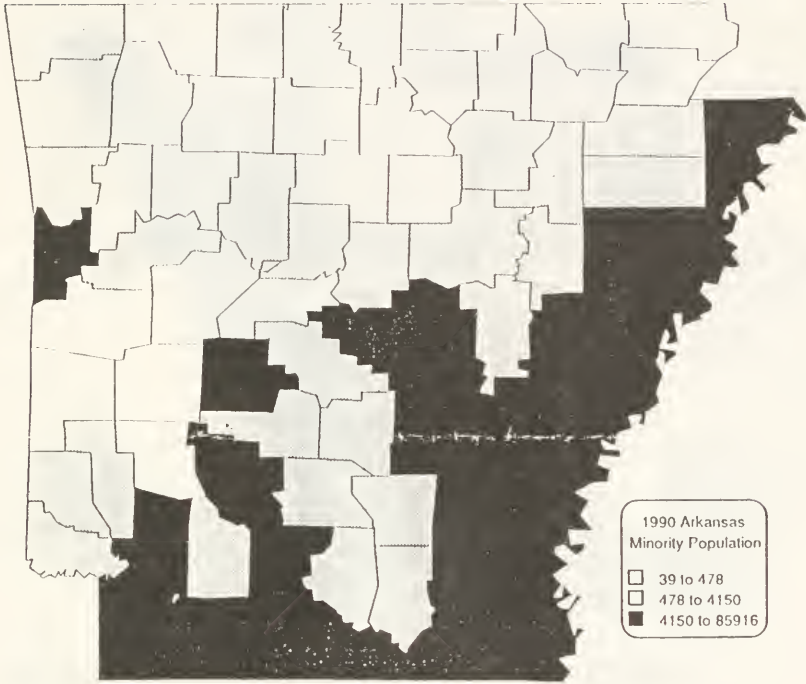
AEG will use this Congressional allocation of \$1 million funds to raise an additional \$1 million in private funds. The matching funds will be raised on a loan-by-loan basis from private sources such as banks and corporations. The core concept of this project is that the RBEG grant will provide the initial funds, AEG will provide subordinated financing and technical assistance and local private sources will provide matching loan funds.

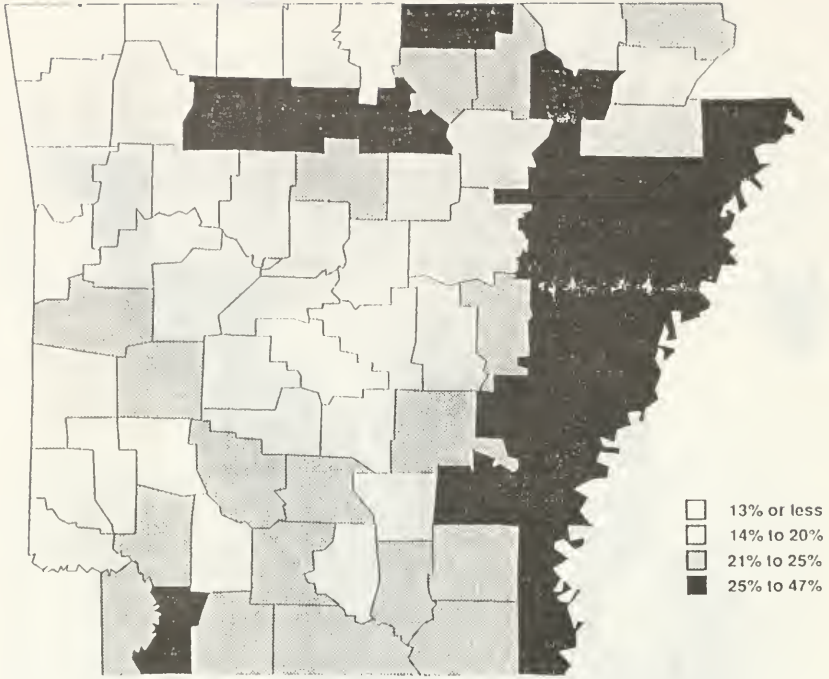
This project is, I believe, a perfect implementation of the goals of the FmHA Rural Business Enterprise Grant (RBEG) program. It is a public/private project that will create employment opportunity in economically depressed, mostly minority, and rural communities that are falling farther and farther behind in the world economy. The project will be managed by an experienced economic development staff with a proven track record in rural Arkansas. AEG will provide the technical, management and marketing assistance resources to assure the success of these efforts. This request is in line with projects and line items that have previously been funded through the RBEG (formerly IDG) program. Because of the high risk and technically difficult nature of business development in the Delta, an RBEG allocation is requested rather than the FmHA IRP loan. The FmHA IRP loan program is a long-term, low-interest loan program in which AEG acts as an intermediary to make loans to businesses. AEG matches the IRP loan fund at 15%.

Here are a few facts about the Arkansas Delta Region:

- The Arkansas Delta has experienced a net loss of 29,000 or 4% of its people during the 1980's (while the rest of Arkansas was growing 5.3%);
- 25% of the population is minority, and 27% of the residents of the Delta live in poverty - nearly twice the national average;
- Three Delta counties (Lee, Phillips and Chicot) have poverty rates of 47%, 43% and 40%, respectively;
- Infant mortality is 20% higher in the Delta than the national average;
- The rate of job growth between 1977 and 1986 was 9% as compared with the statewide average of 18%.
- Delta unemployment in August 1991 was 9% compared to a national 6.8%;
- 34% of all adults had less than an eighth grade education (51% of minority adults); and

- The per capita income of the region's inhabitants is \$11,000; 23% of this income comes from transfer payments.





## Distribution of Arkansans Living in Poverty

The state average is 19% living in poverty

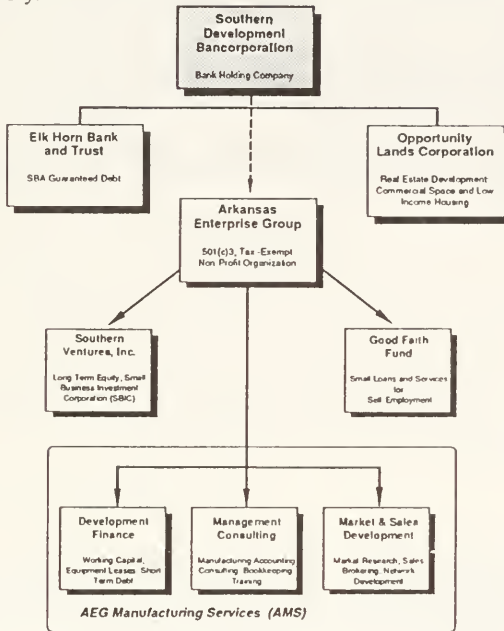
The national average is 13% living in poverty

As the maps above suggest, this loan fund will not only impact low income individuals, but also will focus on minority business creation. The Arkansas Delta has consistently lost ground in comparison to the regional, national and international economy. Maintaining and expanding the Delta rural economy requires communities and companies to successfully compete with international businesses. The agriculturally based Delta economy has changed from a relatively prosperous, labor-intensive process to a highly mechanized, high-technology operation. This mechanization has resulted in an increase in the size of individual farms and a decrease in the number of farm owners, displacing thousands of farm laborers (most of whom were minorities) in a short period of time. The educational and training facilities in the Delta have been slow to address the transition to the electronic/computer age, so the general labor force lags behind the national average in skills.

### The Arkansas Enterprise Group

AEG is the non-profit affiliate of Southern Development Bancorporation, a privately capitalized bank holding company created for the purpose of accelerating economic activity for the benefit of residents of low and moderate income communities of rural Arkansas. AEG provides credit, capital, and information to support the creation and expansion of locally owned small businesses. AEG operates AEG Manufacturing Services which provides financial, marketing, and technical assistance to small manufacturers; Southern Ventures, an business development equity fund; and the Good

Faith Fund, a self employment program. The table on the next page summarizes the five year lending history.



	New Businesses	Total Loans and Investments 1988- 1992
• Elk Horn Bank	46	10,739,577
• Arkansas Enterprise Group	95	\$6,465,868
• Opportunity Lands	25	1,967,452
<b>Total</b>	<b>166</b>	<b>19,172,897</b>

In 1987 a great deal of pressure was exerted on Southern Development Bancorporation and Arkansas Enterprise Group to locate in the heart of the Delta where the greatest poverty and greatest need existed. After much deliberation, prudence and a sense of "not biting off more than one can chew" dictated that south central Arkansas would be best location. South central Arkansas is economically depressed area and certainly in need of AEG's development activities; however, the challenge was not as extreme as in the Delta.

In the last six years Southern and AEG have established a strong staff, a solid development business base, a good statewide network, and have demonstrated that a "development bank and non-profit affiliate" strategy can work in rural Arkansas. The map on the next page shows where AEG has grown businesses and made loans and investments. These firms now employ over 500 employees. AEG has made over \$6.5 million in pre-bankable business loans and investments, and have kept our losses low (less than 7%). Southern as a whole has invested over \$19 million in businesses of the region.

With this business base, experience and staff expertise, we are preparing to tackle the toughest development task in the state: The Arkansas Delta. To do that, we need your help, because AEG has no funds to use in the unavoidably high-risk Delta business development effort. As we said before, FmHA IRP funds appropriate in this case because that program is not designed to absorb the degree of risk involved in this project.



I understand the current pressure to cut national spending. The RBEG funds, however, do not increase spending since they are contained in an existing program and budget allocation. Targeting RBEG funds to a region that is arguably the poorest in the country seems to be justified in terms of public policy. Enlisting the skills of a capable economic development group with a strong track record is one effective way to increase the probability that the funds would, over time, have a measurable and positive impact on the lives of Arkansans living in the Delta and on the economy of the region.

Senator Bumpers and other members of the committee, I would very much appreciate your support for this Delta development project. Thank you very much for allowing me to make this testimony.

## UNIVERSITY OF ARKANSAS

## STATEMENT OF CHUCK CULVER, DIRECTOR OF DEVELOPMENT

As always, we are extremely grateful for the strong support you have given to the University of Arkansas Division of Agriculture. We strive daily to be worthy of the trust that has been placed in us to be good stewards of taxpayer monies, and you can rest assured that our current request is offered with this same understanding.

In past years our wish list has tended to be twenty pages long, because we were trying to provide information that you could use in championing our causes. Now that you are Chairman, we will keep our FY 94 wish list short, but we will be more than happy to provide any in-depth information you desire. Also, because we understand the situation you are in, we are not asking for increases in our existing projects over the amounts provided in the various accounts last year. However, some schools cooperating with us in the several consortiums may be seeking increases through their Congressional delegations. We have informed these consortium partners that we were not asking for increases, but it goes without saying, we are not opposed.

CSRS Building and Facilities

1) Alternative Pest Control Greenhouses - \$1,000,000; this is our No.1 priority project. Last year, monies from this project were transferred to the Rice Germplasm Lab project in Stuttgart. Because we lost a large private gift in the exchange, we were given assurances that this project would be moved to ARS this year to take advantage of 100% federal funding. We now request only \$1 million in CSRS, but ask for language waiving the match requirement on these additional funds. We have \$1.7 million already in federal funds and \$1.3 million in state bond funds on hand. We must use the bond funds by July 1994 or face severe financial penalties. These monies will complete the project.

2) Arkansas Agriculture Building - \$2 million; originally designed to be a one-stop shop building that would include all USDA and Arkansas Cooperative Extension state offices, the building now has been scaled down to include AR Extension. Yet, it will be designed so that add-ons can be readily accommodated. We have \$3 million in state bond funds and \$1 million in previously appropriated state funds to use as a match. We will also seek \$2 million in federal funds for FY95 to finish the project.

3) Alternative Pest Control Center Facility/Carnall Hall - language; the State of Arkansas, through the NCRC, has officially committed \$1 million over 4 years for the \$6 million restoration project. The University will secure another \$2 million from non-federal sources. Because of limited federal funding, and because we plan to retire the Alternative Pest Control Greenhouse project next year, and the Arkansas Agriculture Building the year after, we respectfully request language noting the strong support of the State of Arkansas and the desire of the Subcommittee to help secure \$3 million in funding over the next three fiscal years.

4) Livestock Research and Activity Center - language; we completed the feasibility study this year. Because of federal funding limitations, we seek language only noting the Subcommittee's strong interest in the project and its desire to

help in future appropriations bills. The \$3 million project needs a federal match of \$1.5 million in current dollars.

#### ARS Buildings and Facilities

Rice Germplasm Laboratory - the Division of Agriculture respectfully requests that the federal ARS building projects not be tied to CSRS cooperative building projects when discussing spending caps. Although we strongly support the Rice Germplasm Lab, full funding for this project will swamp all other Arkansas projects (two of which have limited-life bond monies pledged for the required match) if placed under the same spending caps. Since the Rice Germplasm Lab will be located on state property, we also request language encouraging close cooperation between the University of Arkansas and ARS, including the shared use of the new facility.

#### CSRS Special Projects

Alternative Pest Control - \$1,400,000

Food Safety Consortium - \$1,942,000

Rural Policy Research Institute - \$692,000, including \$525,000 and language for RUPRI itself stating that the funds shall be divided equally between the University of Arkansas, University of Missouri, and the University of Nebraska. Other projects:

- a) Arkansas Children's Hospital Department of Pediatrics rural health care access project - \$117,000
- b) Global Marketing Support Services project at UAF - \$50,000

CSRS Federal Administration - Geographic Information System \$1,075,000, with language stating that the University of Arkansas will be the management site for the project that includes UAF, Georgia, and Chesapeake Bay at \$225,000 each; North Dakota, Wisconsin, and Central Washington at \$100,000 apiece; \$60,000 for management operations, and \$40,000 for CSRS grants administration. Wisconsin will move \$75,000 to the GIS project from the CSRS CONSOIL project.

Farm and Rural Business Finance - \$125,000

#### Agricultural Research Service

Human nutrition - Arkansas Children's Hospital Department of Pediatrics - feasibility study for establishment as a fully funded nutrition center

ARS scientists - \$1,250,000, which includes \$250,000 for the Poultry Production Unit at UAF, \$250,000 for the Rice Unit at Stuttgart, \$500,000 for the Family Farms Research Center at Booneville, and \$250,000 for the Aquaculture unit at Pine Bluff - the first ARS unit in the country proposed to be located at an 1890 school. These are strongly supported by ARS. The new ARS plan through FY98 is enclosed. Both the University of Arkansas Division of Agriculture and ARS wanted to advance the timetable for Pine Bluff. By FY98, Arkansas should be well situated, although still well below our sister states.

Center of Excellence in Endophyte/Grass Research - \$200,000

National Agricultural Library

National Center for Agricultural Law Research and Information - \$462,000 and bill language

Economic Research Service

Rice Modeling Project - \$395,000

Extension Service

Beef Producers Improvement Program - \$200,000

Extension Specialist - last year, we received \$100,000 for this position. If you need to show that Arkansas projects have been eliminated, we recommend that this position not be filled. We will attempt to move the headquarters of the beef improvement program to Booneville and use some of this capacity to help disseminate livestock information.

Reorganization of USDA - language; there has been much talk about reorganizing the USDA that does not take into account the operations back in the country. The prime example has been the talk of splitting extension from research. The most highly-successful agricultural program of all time was the establishment of land grant universities and the Cooperative Extension Service. We respectfully request language barring the USDA from using funds to split the historic relationship of research and extension. We further request language directing that both the research and extension function shall report to the same Assistant Secretary.

Rural Telephone Bank

Distance Learning and Medical Link Program - language stating that the Committee expects the Department to fund the Arkansas model nine-community rural video and computer communications project. The project would also link these rural sites to UAF, UAPB, the Cooperative Extension headquarters in Little Rock and the national, high-performance computer network. The program will link isolated rural areas to state and national communications centers for the purposes of 1) distance learning, 2) stimulating community and business development, and 3) dissemination of agricultural information. The total three-year cost of the program is \$640,000.

Soil Conservation Service

SCS has developed a strong relationship with the GIS Center for Advanced Spatial Technology in Arkansas. SCS has been the lead agency within the USDA for the development of GIS capabilities, but this role has been recently threatened through internal maneuvering. We respectfully request language stating the strong support of the Subcommittee for the SCS GIS program, their development of digital soils maps,

Senator, we greatly appreciate your allowing us to share this request list with you. Whatever you believe to be in our best interest, and in the best interest of the taxpayers, will be quite acceptable to us. If we can provide any additional information, please let us know.

Sincerely,

A handwritten signature in cursive script that reads "Chuck".

Chuck Culver  
Director of Development



## BEDOUKIAN RESEARCH, INC.

## STATEMENT OF ROBERT BEDOUKIAN, PRESIDENT

I am Robert Bedoukian, President of Bedoukian Research Inc., Danbury, Connecticut.

Our company has been in the business of manufacturing specialty chemicals for use by the flavor and fragrance industry since 1972. Because the chemistry is so closely related, we have become increasingly involved with the manufacture of insect behavior modifying compounds, i.e. pheromones.

There is a particular need today to integrate efforts on developing biological controls with the environmental and human health aspects of pesticide use. Because of the nature of many insect behavior modifying chemicals, limited market constraints coupled with the regulatory climate make it difficult for the industry, which is composed primarily of small companies, to provide the basic research necessary to ensure effective implementation of these technologies.

In addition, while EPA seems receptive to encouraging these technologies, they need the appropriate scientific documentation to justify the necessary regulatory assistance.

It is for these reasons that I ask that funds be appropriated to establish a model program at USDA's ARS labs in Beltsville to develop biologically effective control which was previously provided by insecticides that are no longer effective or that are no longer available due to regulatory actions. Methods to be studied would include behavior modifying chemicals, other naturally occurring chemicals, microbial agents, parasites and predators. Additional technical assistance in obtaining regulatory approvals, particularly for experimental use, should be provided. Specialized technical information systems for developers and computerized decision support systems for end users should be developed.

I strongly urge that \$500,000 be appropriated to the Beltsville Agricultural Research Center (BARC) in the FY 1994 to establish a model program specifically designed to assist in the development of biologically based methods for control of agricultural insect pests.

## BENEFICIAL INSECTARY

## STATEMENT OF SINTHYA PENN, PRESIDENT

## Personal Profile:

President (1986 to present) of Beneficial Insectary, an established commercial predator/parasitoid production facility since 1978.

Credentials include: Certified Pest Control Advisor, Certified Pest Control Applicator, with a degree in Entomology from Texas A&M University.

Ten years of field experience includes releasing predators and parasitoids, monitoring and consulting growers on a seasonal basis; an additional five years of consultation to private crop consultants and growers regarding their use of predators and parasitoids. International consultation is now oriented towards customized programs for growers or cooperatives to include field efficacy data in order to provide comprehensive pest management programs for long-term results.

## Business Profile:

Beneficial Insectary (BI) is an established commercial predator/parasitoid company with year-round production. The company was founded in 1978 for the production and sale of parasitoids used in filth fly control (confined livestock and poultry). Under new ownership in 1986 the company expanded to meet the needs of producers and consultants for other beneficial organisms. Supplying natural enemies for crop protection (field, row, orchard, greenhouse) is now a major function of the company.

## Industry Profile:

The potential for implementing augmentative biological control programs in many mainstream agricultural crops is now very great. However, the ability of the biological control producers in this country to produce a reliable supply of quality natural enemies is limited. The industry is comprised mostly of small companies struggling to expand with limited capital and often primitive rearing technology. Very little research at the federal and university level has been devoted to mass production of natural enemies. Since the products we produce are not genetically modified nor synthesized in a company laboratory, they are not patentable. Mass production development costs cannot be protected and it is difficult to recover these costs. Also, our product sales are seasonal and do not have a significant shelf life, therefore, profit margins are lower than with patented products that have an extended shelf life.

Another area of concern is the lack of field efficacy data. Although of major importance, industry cannot afford the cost of extensive field testing. Companies should be allowed to continue the practical application of these non-toxic natural enemies without undue regulations while cooperating with governmental and university agencies to properly evaluate field results. This particular area of biologicals (predators and parasitoids) must be viewed separately from micro-organisms and genetically altered material. Again, financial constraints of small companies are a major factor. The industry is, nevertheless, growing rapidly and I expect that as a group, we will be able to support future research projects.

For now, however, I feel it is very important for public agencies such as the USDA to expand their involvement in both research and development of these (natural enemies) and other biological control products and help related industries to cope with selected gaps in the scientific, technical, and regulatory-related knowledge base.

The need for some policy changes has become increasingly important. These changes would support and encourage the commercial development, production and delivery of biologically based and environmentally compatible products and methods for pest management. Attention in this matter is quite urgent. Therefore, I respectfully ask that funds be provided to address these issues.

We are all aware of the current budget constraints. However, it is my understanding that the Administration has requested additional funds for FY 1994 for integrated pest management (IPM) and biological controls and for minor-use pesticide clearance. I strongly feel that \$500,000.00 should specifically be appropriated to the Beltsville Agricultural Research Center to assist in the development of biologically based methods for control of insect pests of crops.

## BIOBASE TECHNOLOGIES, INC.

## STATEMENT OF MARK TICEHURST, PRESIDENT

BioBase Technologies, Inc. is a small business which specializes in nonchemical means of pest control. We employ 8 full time and several seasonal employees. The use of nonchemicals including parasites and biological insecticides has provided effective control and has promoted business growth.

Nonchemical control of forest and agricultural pests has been successful, but it has much greater potential than that currently recognized. This potential can be realized in less chemical contamination of water, soil, air, and the food supply, and in the stimulation of a relatively small but growing industries.

Considerable funds have been spent to develop chemical pesticides; however, relatively little has been invested in the development of alternative approaches. Where no alternatives are available, chemicals are often an effective approach. We do not advocate the elimination of chemical pesticides. But, in many situations, alternatives to chemicals do exist or can be developed

I recommend greater emphasis on research and development of alternate approaches which emphasize:

- Viral insecticides
- Potentiators for microbial insecticides
- Feeding stimulants
- Augmentative release of parasites and predators
- Behavior modifying compounds

I believe the USDA Agricultural Research Service (ARS) at the BARC facility, in cooperation with industry, should play a key role in this area with appropriations commensurate to the task. I suggest that industry be intimately involved with the planning, conduct, and use of this technology.

I am excited about the opportunities and benefits in alternative control tactics. I believe that the country will benefit from your support. I will be pleased to work with you in support of this effort.

Sincerely,



Mark Ticehurst, Ph.D  
President

## BIOSYS, INC.

STATEMENT OF VENKAT SOHONI, PRESIDENT AND CHIEF  
EXECUTIVE OFFICER

I am Venkat Sohoni, President and Chief Executive Officer of biosys, Inc. of Palo Alto, California.

biosys is a biopesticide company with interests in the use of beneficial nematodes, viruses and semiochemicals for detection, monitoring and control of insect pests.

Our Company's activities are directed at integrated efforts to develop and commercialize biological and bio-rational control agents which recognize and satisfy the increasing need for greater human and environmental safety.

The future availability of conventional pesticides is likely to become limited due to such factors as: insect resistance, lack of financial incentives for new development, expensive registration and increasing concerns about pesticide residues in foodstuffs and in pesticide usage in both agricultural and urban environments.

biosys feels that these trends strongly favor the increased use of alternative, biologically-based, controls. However, the barriers to market entry for such control systems are high and few small companies, such as ours, are capable of the basic research needs to effectively and very importantly, rapidly develop replacements for conventional insecticides. In particular, the loss rate of such insecticides on the smaller crops, such as vegetables, represents a major challenge.

As a result I am convinced that increased effort by the public sector, working closely with the private sector, will be necessary to meet future needs for safer, environmentally compatible insect pest control technology. It is my opinion that the Agriculture Research Service's Beltsville Research Center is the location where USDA has the best opportunity to develop programs that will satisfactorily address the issues mentioned.

Therefore, I request that funds be provided to set up a model program directed at developing bio-rationally based methods for insect control on vegetable crops.

I recommend strongly that \$500,000 be appropriated to the Beltsville Agricultural Research Center to be used to establish one single targeted model program aimed at the development of bio-rational methods for control of vegetable insect pests.

I sincerely request that this recommendation be considered favorably.



## CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

## STATEMENT OF HENRY J. VOSS, DIRECTOR

My name is Henry Voss, Director of the California Department of Food and Agriculture, and I am representing Governor Wilson in support of the \$3.4 million augmentation to USDA-APIIS-International Services budget to establish a pest-free zone along the U.S./Mexico border.

Mexican fruit fly, Anastrepha ludens, ranks as the second most destructive pest of fruits and vegetables after the Mediterranean fruit fly. It attacks over 50 host crops, many of which are grown commercially and in backyards all over the state. It is estimated that the economic impact of the Mexican fruit fly, if permanently established in California alone, would be about \$200 million annually.

The insect is also a persistent and serious pest of fresh fruit in commercial and homeowner orchards throughout much of Mexico and the Rio Grande Valley of Texas. All the sunbelt states are vulnerable to infestations by this devastating pest. The farther south we can push the Mexican fruit fly problem, the more American agriculture is protected. It is mutually beneficial to both Mexico and the U.S. to eradicate the existing infestation of Mexican fruit flies along the international border and establish a pest-free zone thereafter.

Just as a pest-free zone has already been established in the Mexican State of Sonora, from which commercial shipments of apples, oranges, and peaches can enter the U.S. without fumigation treatments, Mexico's Secretary of Agriculture and Water Resources (SARH) is working to develop a comprehensive eradication plan for the northern tier of states with priority on Baja California.

California does not have a reliable source of sterile Mexican fruit flies for use in emergency eradication projects. The only sterile Mexican fruit fly (Mxfly) rearing facility with which California has any working agreement is the United States Department of Agriculture (USDA) facility in Mission, Texas. That facility has a capacity of rearing 80 million sterile flies per week and is primarily committed to Mxfly suppression in Texas' Rio Grande Valley citrus production area.

In recent years, the Mxfly has been found with regularity in Tijuana, Mexico; and the international border is no physical barrier to the natural spread of the pest into California. The pest can also be spread artificially by people traveling between the two areas; and the USDA's agricultural quarantine inspection program at the international border is focused primarily on commercial traffic. Private citizens of the U.S. visiting Tijuana and Mexican citizens visiting the U.S. can unintentionally transport the Mxfly both as adult fertile flies hitching a ride in cars and as maggots infesting host fruit purchased in Mexico and carried to Arizona, California, New Mexico, and Texas.

The recent experience with eradication of the 1989-90 Mediterranean fruit fly infestation in Southern California makes it abundantly clear that the public will not tolerate multiple aerial malathion-bait spray treatments, so California must make arrangements for a reliable supply of high quality sterile Mxflyes for eradication purposes. A supply of at least 100 million sterile flies per week is needed.

Mexico is about to construct a new sterile fruit fly rearing facility this year at Metapa, State of Chiapas. The facility will have a capacity of 150 million sterile flies per week. The sterile flies from this facility will be used to establish and maintain fruit fly-free zones in the northern tier of Mexican states. The State of California plans to contribute \$400,000 for the purchase of equipment and \$500,000 annually to share the cost of operating the facility in Metapa.

The sterile fruit fly rearing facility and pest-free zone along the U.S./Mexico border are good investments for the United States. Historically, each time a Mexican fruit fly infestation has occurred in California, or any other sunbelt state, as much as \$50,000 to \$100,000 has been spent on delimitation trapping for a single fly, and an infestation can cost \$1.0 million or more.

If the USDA-APHIS FY 1994 budget is augmented by \$3.4 million for operational costs and technical assistance, the pest-free zone concept can become reality. The plant protection agencies are ready to enter into this international effort if the U.S. Congress directs the USDA and appropriates \$3.4 million annually, beginning FY 1994. The \$3.4 million spent per year to assure a pest-free zone would be the proverbial "ounce of prevention." The preventive approach has an additional advantage in that it minimizes pesticide use and is environmentally sound, as well as far more publicly acceptable. It makes sense biologically and environmentally for the U.S. and Mexico to enter into a partnership for the establishment of a pest-free zone across the northern tier of Mexican states

## CALIFORNIA PRUNE, RAISIN, AND WALNUT MARKETING BOARDS

## STATEMENT OF GARY OBENAUF, DIRECTOR OF RESEARCH

SUMMARY OF REQUEST

Forty-two (42) California agriculture and related industries (Attachment I) request that the Committee include in its fiscal year 1994 appropriations, \$2.8 million for planning and design funds for the Agricultural Research Service (ARS) for the construction of a Horticultural Crops Research facility in Parlier, California to replace the existing facility in Fresno, California.

It is also requested that the Committee include language, if necessary, authorizing that funds from the sale of existing land and facilities at Fresno be used for the development of the replacement facility at Parlier.

We request that the FY 1994 appropriations bill include \$2.8 million for the Agricultural Research Service (ARS) for final planning and design for the construction of a new facility in Parlier, California to replace the existing facility in Fresno, California. We do so in behalf of 42 fresh fruit, vegetable, fiber, dried fruit and nuts and speciality crop industries. (Attachment I) We believe that this facility provides valuable research that benefits the nation's agriculture as a whole.

In fiscal year 1993 the Congress appropriated \$1.27 million to be used by the ARS for three ARS facilities including Parlier. The agency allocated \$300,000 for preliminary planning and design work at the Parlier site.

The Fresno facility is recognized nationally and internationally for its valuable research. However, if effective research is to continue, new facilities are vitally needed. The original buildings were constructed in the 1920's and are not adequate for state-of-the-art research. Residential and commercial encroachment is also a problem. The cost of construction of those facilities and specialized equipment is estimated to be approximately \$35 million based on a 1996 final construction date. The construction of this facility will allow for the continuation of existing research and significantly improve the capabilities of the ARS to provide even greater benefits to agriculture and therefore the consumer, not only in the western United States, but nationally. \$2.8 million is necessary to complete final planning and design so that preparations can be made for construction shortly thereafter. It is important that research keep pace with the critical issues facing agriculture, such as production and marketing of commodities; preserving air, water, soil quality; post-harvest quality of crops; and the removal of quarantine barriers. Resolution of these problems is essential if we are to sustain our domestic and export markets.

The ARS has now purchased the necessary land for the construction of a new facility in Parlier, California. It is also requested that, if necessary, language be included in the fiscal year 1994 bill providing authority to sell existing land and facilities and to use the proceeds for the purchase of specialized equipment and further development of the replacement facility at Parlier.

The scientific staff of the ARS Fresno facility is uniquely qualified to continue and expand research in numerous critical areas. However, in order to do so effectively, there is a need to replace the facilities. Replacement is long overdue and we wish to communicate the critical importance of this need to the future of agriculture.

Thank you for the opportunity to present testimony in support of this vital research facility.

## Facility List

Pat Honchell  
Alfalfa Seed Production Res.  
Board  
531-D North Alta Avenue  
Dinuba, CA 93618

Steve Easter  
Blue Diamond Growers  
P. O. Box 1768  
Sacramento, CA 95812

Gene Stokes  
Cal. Apricot Advisory Board  
1280 Boulevard Way, Suite 107  
Walnut Creek, CA 94595

Patty Bowman  
Cal. Artichoke Advisory Bd.  
P. O. Box 747  
Castroville, CA 95012

Mark Affleck  
California Avocado Commission  
1251 E. Dyer Road, Suite 200  
Santa Ana, CA 92705

Ben Goodwin  
California Beet Growers Assn.  
2 West Swain Road  
Stockton, CA 95027

Ron Schuler  
Cal. Canning Peach Assn.  
P. O. Box 7001  
Layfayette, CA 94549

Gerald Munson  
Cal. Cantaloupe Adv. Board  
531-D No. Alta Avenue  
Dinuba, CA 93618

Dana Dickey  
California Celery Advisory  
Board  
531-D No. Alta Ave.  
Dinuba, CA 93618

Joel Neleon  
California Citrus Mutual  
P. O. Box 687  
Visalia, CA 93279

Thomas Krugman  
California Cling Peach Adv. Bd.  
P. O. Box 7111  
530 Howard Street  
San Francisco, CA 94120

K. B. Smith  
California Cotton Growers Assn.  
1900 N. Gateway Blvd. #156  
Fresno, CA 93727

K.B. Smith  
California Cotton Ginners Assn.  
1900 N. Gateway Blvd. #156  
Fresno, CA 93727

Henry Voss  
Cal. Dept. of Food &  
Agriculture  
1220 "N" Street  
Sacramento, CA 95814

Frank Mosebar  
California Dried Fruit Assn.  
P. O. Box 270-A  
Santa Clara, CA 95052

Gerald Munson  
Cal. Dry Bean Advisory Bd.  
531-D No. Alta Avenue  
Dinuba, CA 93618

Ron Klamm  
California Fig Advisory Board  
3425 N. First St., Suite 109  
Fresno, CA 93726

Jim Melban  
California Fresh Carrot Adv.  
Bd.  
531-D No. Alta Avenue  
Dinuba, CA 93618

Ed Beckman  
Cal. Fresh Market Tomato Adv.  
Bd.  
2017 N. Gateway Blvd. #102  
Fresno, CA 93727

Mike Durando  
Cal. Grape & Tree Fruit League  
1540 E. Shaw, Suite 120  
Fresno, CA 93710

Wade Whitfield  
Cal. Iceberg Lettuce Commission  
P. O. Box 3354  
Monterey, CA 93942

Mark Houston  
Cal. Kiwifruit Commission  
1540 River Park Dr. Suite 120  
Sacramento, CA 95815

Dana Dickey  
California Melon Research Bd.  
531-D No. Alta Avenue  
Dinuba, CA 93618

Jean Peltier  
California Pear Growers  
77 Cadillac Drive  
Sacramento, CA 95825

Brian Blain  
California Pecan Growers Assn.  
1240 E. Caldwell Street  
Visalia, CA 93277

Ron Sether  
California Pistachio Commission  
1915 N. Fine Ave.  
Fresno, CA 93727

Tom Cherry  
California Planting Cotton Seed  
Dist.  
2816 K Street  
Bakersfield, CA 93302

Jim Melban  
California Potato Research  
Advisory Bd.  
531-D No. Alta Avenue  
Dinuba, CA 93618

Richard Peterson  
California Prune Board  
5990 Stoneridge Dr. #101  
Pleasanton, CA 94588-2706

Clyde Nef  
Cal. Raisin Advisory Board  
3445 N. First #101  
Fresno, CA 93726

George Ing  
Washington State Tree Fruit  
Research Commission  
P. O. Box 1009  
White Salmon, WA 98672

Dava Riggs  
California Strawberry Advisory  
Board  
P. O. Box 269  
Watsonville, CA 95077

Bruce Obbink  
Cal. Table Grape Commission  
P. O. Box 5498  
Fresno, CA 93755

Gene Miyao  
Cal. Tomato Res. Institute  
1757 Barcelona Street  
Livermore, CA 94550

Turner Oylo  
California Walnut Commission  
1540 River Park Dr. Suite 101  
Sacramento, CA 95815

Billy Peightal  
Citrus Research Board  
25129 The Old Road #300  
New Hall, CA 91381

Richard Douglas  
Diamond Walnut Growers  
P. O. Box 9024  
Pleasanton, CA 94566

Harold Bradshaw  
Iceberg Lettuce Research Board  
512 Pajaro Street  
Salinas, CA 93901

Richard Douglas  
Sun-Maid Raisin Growers  
P. O. Box 9024  
Pleasanton, CA 94566

Richard Douglas  
Sun-Sweet Prune Growers  
P. O. Box 9024  
Pleasanton, CA 94566

Richard Douglas  
Valley Fig Growers  
P. O. Box 9024  
Pleasanton, CA 94566

George Ing  
Winter Pear Control Commission  
601 Woodlark Bldg.  
Portland, OR 97205



## CCT CORPORATION

## STATEMENT OF VERNON L. ILLUM, REGIONAL MANAGER

CCT Corporation is a small business entity developing and commercializing Biocontrol products for agriculture crop production and protection. The potential for the use of these Biocontrol products is increasing at a tremendous rate. The loss of available conventional pesticides along with the public concern about environmental and health risks are two key reasons for this increase.

In most cases the Biocontrol products being developed are targeted for use on specialty and/or minor crops. Due to the minimum acre treatment potential for these crops the potential return on investment for the biocontrol product development is lower than most conventional pesticides. However, the cost to develop and commercialize these Biocontrol products is equal to or higher than conventional pesticides. An increase in public sector involvement in Biocontrol product development is necessary if the demand for these products by growers and the general public is to be met.

The Beltsville Agricultural Research Center (BARC) of the Agricultural Research Service has an existing program which includes The Insect Biocontrol Laboratory. The Insect Biocontrol Laboratory in conjunction with state scientist and private companies is currently conducting research on microbial agents, predators and parasites, and feeding stimulants. There is a definite need to strengthen this existing program, to increase the number of cooperative projects, and to establish comprehensive model integrated pest management programs targeted at specific vegetable and other minor crop pests.

CCT Corporation believes that the need for increasing public sector involvement in Biocontrol product development and the existence of the Biocontrol Laboratory at BARC provide a unique opportunity to facilitate this increase.

We request and urge that \$500,000 be specifically appropriated to the Beltsville Agricultural Research Center to establish a focused model program within the Insect Biocontrol Laboratory to assist in the development of Biocontrol crop production and protection products and methods for the control of insect pests on vegetables and other minor crops.

## STATEMENT OF THE CENTER FOR FOREST PRODUCTS MARKETING

A National Research and Training Center

**Requesting Agency:** The Center for Forest Products Marketing  
Department of Wood Science and Forest Products  
College of Forestry and Wildlife Resources  
Virginia Polytechnic Institute and State University  
Blacksburg, VA 24061-0503

**Contact Persons:** John Punches  
Phone: 703 231 - 8835  
Fax: 703 231 - 8868

Dr. John Muench  
Phone: 703 231 - 7656  
Fax: 703 231 - 8868

Dr. Geza Ifju  
Department Head  
Phone: 703 231 - 8853  
Fax: 703 231- 3330

**Amount Requested:** \$500,000/year

**Duration:** 4 years

### Rural Economic Development

Economic progress begins with our ability to extract food, fuels and raw materials from nature in an environmentally responsible manner. Natural raw materials must then be converted into useful products, and these products marketed in an exchange economy. Most of the United States' rural areas have abundant timber supplies and already employ significant numbers of workers to produce a wide array of wood and wood fiber products. However, the economic potential of our forests is now being under-utilized. Furthermore, in the midst of rising environmental concerns, raw material shortages, escalating materials costs, and a declining resource base, the forest products industry faces an uncertain future.

We are faced with a national crisis in our forest products industry, an industry critical to rural economies. The industry lacks the information it needs to:

- \* Justify the costs of better stewardship of our forest resources to grow more and higher quality timber;
- \* Market new products that employ more efficient use of wood materials;
- \* Add greater value to the forest products now being manufactured and be more competitive in both domestic and international markets;
- \* Generate more jobs, especially in rural areas;
- \* Attract its next generation of employees.

If these benefits are to be realized, our universities must do a better job of educating students and the public about the forest products industries, of providing sound information to the industry, and in general, of promoting the wise and efficient use of our renewable natural resources.

Better knowledge of present and potential markets for forest products is required. The U.S.D.A. has long recognized the economic importance of the forest products industry by supporting research to improve the processing of forest products. What is needed now is a similar effort to provide the market information and high quality employees the industry needs if it is to prosper.

New markets and products are essential to the long-term growth of an industry. Research conducted by the Center for Forest Products Marketing will identify new market opportunities and investigate trends in existing markets.

Rapid technological advancement in recent years has resulted in new wood-based products. Many utilize what was previously considered wood waste. Others involved recycled wood products. These new products promise to reduce industry's demand on the forest resource base. In other words, products made from wood waste or recycled wood can allow society's needs to be fulfilled by a smaller harvest of trees. This can only be realized if industry has the ability to profitably market alternative wood products.

The Center's efforts will lead to new products and more efficient marketing of existing products. A healthy industry will provide more job opportunities and allow companies to justify the costs of forest stewardship.

Industry has recognized a need for individuals trained in forest products marketing and management. In the midst of declining enrollment in the nation's wood science and forest products programs, Virginia Tech's program continues to grow. Thus, the importance of the Center will increase on a nationwide scale in the foreseeable future. The training the Center provides will ensure a supply of highly qualified employees - employees that are essential to the future success of forest products companies.

#### **The Center for Forest Products Marketing**

The Center for Forest Products Marketing is a cooperative venture of the forest products industry, various public agencies, and Virginia Polytechnic Institute and State University.

The Center has three goals:

- (1) To train marketing-oriented people for employment in the forest products and related industries, and to train new educators and researchers in forest products marketing.
- (2) To be a continuing source of marketing research to help maintain and enhance the competitiveness of U.S. forest products industries.
- (3) To promote wise stewardship of our renewable forest resource for economic growth and to meet society's expanding needs for affordable and environmentally sound wood and fiber products.

The Center currently has 47 industry members and continues to grow. A Special Appropriation will leverage industry and university funds, allowing the Center to develop into a significant National Research and Training Center. The Center is the only one of its kind in North America and is the premier Ph.D. granting educational program in forest products marketing. It provides unique training for future industry employees and at the same time uses marketing research activities as a tool to train the educators and scientists of the future.

The Center is responsive to the needs of both industry and government. Its Board of Directors includes industry representatives elected by its industry supporters and scientists from the U.S.D.A. Forest Service and U.S.D.A. Cooperative State Research Service. The Center's programs reach beyond the borders of Virginia, providing valuable services to the forest products industries nationwide. Unfortunately, it is this national scope that makes state support of the Center unlikely, as the majority of its industry members are not located in the state of Virginia.

A state university can no longer provide the level of funding necessary for a program of the Center's nature to prosper. Federal assistance is necessary to fund new research, increase teaching resources, enhance student recruitment efforts, and perhaps most importantly, provide

a show of strength that will attract further industry support and eventually make the Center self-sustaining.

### **Forest Products Marketing at Virginia Polytechnic Institute and State University**

The U.S.D.A. National Needs Fellowship Program has identified forest products marketing as an area in critical need of more scientists and educators. Virginia Polytechnic Institute and State University has had an outstanding undergraduate and graduate program in forest products marketing for nearly a decade. It offers B.S., M.S., M.F., and Ph.D. degrees, and has the largest forest products marketing graduate program in North America.

The forest products marketing research program at Virginia Polytechnic Institute and State University is the leader in its field. For example, over the past five years it produced over 35 percent of all marketing articles published in *Forest Products Journal*. The U.S.D.A. Competitive Grants Program in Forest and Rangeland Resources, and the National Needs Fellowship Program have recognized the program by awarding it their only grants in forest products marketing.

A recent survey of administrators of university forest products programs in the United States ranked the Department of Wood Science and Forest Products at Virginia Polytechnic Institute and State University as the nation's top program. The department was judged by a team of scientists from the Society of Wood Science and Technology as having one of the best teaching, research, and extension programs in the country. Through a competitive process, the State Council of Higher Education for Virginia named the Department a Commonwealth Center of Excellence. The Department was identified by the National Academy of Science as having the breadth and strength to develop into a national center of significance. The Center for Forest Products Marketing is an integral part of Virginia Tech's Department of Wood Science and Forest Products.

### **Federal Funding**

Last year Congress funded initiatives for wood utilization research, recognizing specific programs in three states. The Center for Forest Products Marketing asks the Appropriations Committee to consider funding for marketing research and education related to the forest products industries. Funding for the Center for Forest Products Marketing will address the need for training and research in forest product marketing, resulting in increased industrial productivity, efficiency, and competitiveness. Our nation will be the ultimate beneficiary.

## CENTER FOR SCIENCE IN THE PUBLIC INTEREST

## STATEMENT OF BRUCE SILVERGLADE, DIRECTOR OF LEGAL AFFAIRS

The Center for Science in the Public Interest (CSPI)<sup>1</sup> is pleased to have the opportunity to submit this statement regarding the Fiscal Year 1994 appropriations for the Food and Drug Administration (FDA). CSPI would like to focus our statement on FDA's use of appropriated funds for the regulation of dietary supplements i.e., vitamins, minerals, herbs, amino acids, and other nutritional substances.

CSPI strongly opposes attempts by the dietary supplement industry to use the appropriations process to limit the ability of the FDA to prohibit misleading health claims on supplement products. The appropriations process should not be used to determine the regulatory treatment of supplements. This issue should -- and is -- being considered by the FDA and by the appropriate Congressional committees.

CSPI believes that dietary supplements may offer real health benefits and that the availability of safe, high-quality, and appropriately labeled supplements should not be restricted. A great deal of scientific evidence points to the potential benefits of many supplements and consumers should certainly have the right to purchase such products without government interference.

We also believe, however, that the right to choose dietary supplements is undermined by misleading or inadequately substantiated health claims on supplement labeling. Unfortunately, such claims pervade the shelves of health food stores.

The prevalence of misleading health claims is one of the reasons why Congress passed the Nutrition Labeling and Education Act of 1990 (NLEA). This law sets criteria that the FDA must follow when allowing health claims for foods and nutritional supplements.

Under the NLEA, the FDA was given discretion to regulate health claims for supplements more strictly, less strictly, or in the same manner as health claims for conventional foods. We believe that the FDA correctly proposed that health claims for both foods and dietary supplements be supported by "significant scientific agreement." There is no public health rationale for setting a different standard for dietary supplements.

Some organizations have charged erroneously that the NLEA is being used by the FDA to ban the sale of some types of products. Although this charge is not true, the supplement industry continues to perpetuate this myth.

For example, in its testimony before the House subcommittee,<sup>2</sup> the National Nutritional Foods Association (NNFA)

---

<sup>1</sup> CSPI is a non-profit consumer advocacy organization located in Washington, D.C. CSPI was formed in 1971 and is now supported by more than 600,000 members, the sale of educational publications, and foundation grants.

<sup>2</sup> It is our understanding that NNFA has submitted a written statement to this subcommittee and that it is identical to the testimony it presented before the House subcommittee.



refers repeatedly to **proposed** FDA regulations published in the Federal Register in November 1991. NNFA claims that the FDA's proposed rules would make it difficult to sell high potency vitamin and mineral supplements that contain greater amounts of a vitamin or mineral than is normally found in foods. NNFA claims that these proposed rules represent:

"a back door attempt by the agency to undermine Section 411 of the Food, Drug and Cosmetic Act which precludes limits on potency levels of dietary supplements."<sup>3</sup>

What the NNFA fails to mention is that whatever statements the FDA made in conjunction with its November 1991 proposed rules have been superceded by newer final regulations issued on January 6, 1993. While the legal effect of the FDA's final rules on dietary supplements have been nullified by the moratorium established by the Dietary Supplement Act of 1992<sup>4</sup>, these regulations nonetheless represent the FDA's current policy.

In its final regulations, the FDA makes clear that it will allow a health claim for a dietary supplement that contains more of a vitamin or mineral than is normally found in food. The preamble to the FDA's final rules states:

"Nothing in the regulations would necessarily prevent a supplement from bearing a health claim when that supplement contains a level of a substance that exceeds the level achievable in the context of the daily diet."<sup>5</sup>

In accordance with this policy, the FDA has, in fact, allowed health claims for calcium supplements that contain more than 100% of the U.S. Recommended Daily Allowance for calcium.<sup>6</sup>

NNFA's repeated reference to the FDA proposed rules that have been superceded by final regulations is disingenuous, if not outright misleading.

Although the FDA has made its position clear, the supplement industry continues to urge consumers to contact their elected representatives in support of S. 784, legislation sponsored by Senator Hatch that would repeal portions of the NLEA. Many consumers, believing that the FDA is using its authority under the NLEA to ban the sale of certain types of supplements, are responding to this battle cry by writing Congress in support of this bill. However, seventeen major national health and consumer organizations have written Senator Hatch to express serious objections to this legislation.

The public's misunderstanding about the effect of the NLEA and the impact of Senator Hatch's bill is unfortunate. The NLEA is a landmark consumer protection law. Prior to the enactment of the NLEA, all health claims on food and dietary supplement labels

---

<sup>3</sup> Statement of Richard Meyers, Legislative Director, National Nutritional Foods Association, before the Subcommittee on Agriculture, Rural Development, FDA and Related Agencies, of the House Appropriations Committee, April 1, 1993, page 4.

<sup>4</sup> P.L. 102-571.

<sup>5</sup> 58 Federal Register 2500 (Jan. 6, 1993)

<sup>6</sup> Id.

were considered by the FDA to be illegal, unapproved claims for so-called "new drugs." In light of all the new knowledge about the benefits of a proper diet and supplements, Congress determined that well-supported health claims should be allowed on labels. As a result of the passage of the NLEA, dietary supplement producers will, for the first time ever, be legally allowed to make health claims on certain products.

Under the NLEA, the FDA has allowed health claims for low fat, low cholesterol and low sodium foods, as well as foods high in calcium, vitamins A and C, or fiber. As previously mentioned, the FDA has also allowed claims for calcium supplements. We believe the agency should consider allowing additional health claims for supplements.

The NLEA sets up a procedure that allows consumers, supplement manufacturers, and others to petition the FDA to allow additional health claims. One need only show that the claim is supported by "significant scientific agreement" -- one does not have to provide the type of expensive clinical data necessary to gain FDA approval of a new prescription drug. This procedure ensures that health claims are reliable, protects consumers from fraudulent health claims, and increases the credibility of claims that are made.

If this subcommittee prevents FDA from implementing this provision in the NLEA, it will be nearly impossible for the agency to prevent unscrupulous individuals (be they big or little companies, private nutritionists or physicians) from defrauding the public by marketing supplements deceptively. For some consumers, it might become increasingly difficult to distinguish between products that make well-supported health claims and others that promise a world of health benefits but deliver only broken promises.

We believe strongly that FDA should be allowed to proceed. If the FDA is prohibited from expending funds to implement its rules for health claims for dietary supplements, then unsubstantiated claims will continue to proliferate and consumers will not be able to depend on supplement labels for reliable health information.

In closing, we reiterate our opposition to attempts by the dietary supplement industry to use the appropriations process to limit the ability of the FDA to prohibit misleading health claims on supplement products. This issue should be left to the appropriate Congressional committees that were responsible for the NLEA and the Dietary Supplement Act of 1992.

We thank the subcommittee for the opportunity to submit this statement and would be pleased to submit any further information that the subcommittee may request.

## CHILDREN'S NUTRITION RESEARCH CENTER

## STATEMENT OF DR. BUFORD L. NICHOLS, JR., DIRECTOR

Mr. Chairman and members of the Subcommittee, it is a privilege to submit our testimony to the Subcommittee on behalf of the Children's Nutrition Research Center (CNRC).

The Children's Nutrition Research Center is the only USDA nutrition research center dedicated to work on the food needs of mothers and of children from pregnancy through adolescence. We link agricultural production and food processing together with medicine to make mothers and their babies healthier.

We are unique in that, in addition to M.D.'s and Ph.D. human nutrition specialists, we also have on staff several swine nutrition scientists and a plant physiologist, who runs what is probably the only greenhouse located in a major medical center. We are also one of the world leaders in the technology of stable (non-radioactive) isotopes, which with our other unique facilities gives us the ability to do research that cannot be done anywhere else.

We also want our research to be used. In addition to working with other USDA research centers, we have for many years actively worked with Extension, WIC, Child Nutrition, and other USDA programs to speed the application of the fruits of our work. In fact, the Extension Service has just placed a National Program Leader for Infant and Maternal Health at the CNRC.

The CNRC has a long track record of producing excellent research results. In order to comply with the Subcommittee's requested limits on materials placed in the record I will mention only a few highlights.

**Calcium Requirements for Children**

CNRC work is leading the way to many changes in our basic nutritional recommendations. For example, we have found that current Recommended Daily Allowances, or RDA's, for calcium intake for girls from infancy through puberty are inadequate. In studies which have major implications for osteoporosis prevention, CNRC has discovered that calcium absorption and bone growth in girls is significant at age 5-8, reaches a maximum at ages 8-13, and drops off substantially at age 15-16, or two years after menarche (first menstrual period). Current RDA's for age 1-10 are 800 milligrams per day of calcium (about 3 servings/day of dairy products), increasing to 1200 mg/day for ages 11-24. CNRC scientists believe that the RDA's need to be increased to reflect the fact that children need much more calcium at much younger ages than previously thought. We have also found that more than 85% of all girls over age 11 are not getting even the current insufficient RDA's of calcium.

Dairy products supply about 2/3 of all dietary calcium, so this research has obvious implications for USDA commodity programs as well as for USDA feeding programs such as school lunch, WIC, and Food Stamps. It also could have a major health impact in reducing osteoporosis later in life.

#### **Protein Requirements for Nursing Mothers**

CNRC research is playing a pivotal role in changing the RDAs of protein for nursing mothers as well. Current RDA's are based on measurements of the nutrients going out in breast milk. We have found that this measurement is just the tip of the iceberg, since lactation speeds up the mother's whole metabolism. Our work has shown that nursing mothers need 33% more protein than the current RDA amount. These results been sent by the Food and Nutrition Service to state nutritionists and may well result in an increase in the protein package provided to women in WIC programs.

We also have indications that RDA's for other nutrients may be too low as well.

#### **Premature Infants**

The CNRC has made a major impact in improving the feeding of premature infants. It costs about \$1,000 per day to care for premature babies -- \$2,000 if they are in intensive care. We are getting many of these preemies out of the hospital up to 10 days sooner by using new formulas and feeding techniques. CNRC has shown that preemies do not absorb carbohydrate energy as well as full-term infants, and we are also doing studies on differences involving fats and other nutrients. We have also identified 2 growth factors in human milk, and one of these has been licensed for studies that may lead to its addition to baby formula.

#### **Teenage Mothers**

What payoffs can you expect in the future? Again, I will mention only a few. First, our work on the nutrient needs of nursing mothers leads to a very obvious and profound question: What about the nutrient needs of teenage mothers? We know that teenage mothers tend to have smaller babies. They also tend to have babies which are small relative to their gestational age, a measurement which is associated both with more severe medical problems in infancy and with increased risk of degenerative diseases later in life.

Teenage mothers are actually "children who are having children." But we know very little about their nutritional needs. We as a society have far too many teenage mothers, and we have a particularly large concentration of them, divided among many racial groups, in Houston. Although unfortunate for society, it provides us with an excellent pool of research subjects. If better nutrition can reduce the number of low

birthweight babies, then the health care savings from this research investment could be enormous. We are working with the Extension Service to address this national priority.

#### **Metabolic Research Unit**

However, to do research on teenage mothers we need to bring them into our Metabolic Research Unit, or MRU. In the MRU we can closely monitor the amount and type of food they eat and the uses to which those foods are put. We do not have the funds to fully staff the MRU. We are the only USDA nutrition center that does not have a fully functional MRU, and we badly need that. The facilities are there, but we need additional funding of \$3 million to fully staff and operate them. Currently our hours of operation are limited by the lack of staff to care for volunteers who are willing to come in.

#### **Plant Physiology Unit**

We also need to get our Plant Physiology Unit fully operational. This unit is in essence a very high-tech greenhouse. We have grown labeled rice, soybeans, and peas hydroponically in small batches to prove our methods, and we could grow other food crops as well. However, we need additional funds to grow larger quantities and to process them into formula and food for our studies.

By using this unit to produce foods that are labeled with stable isotopes, we can determine how a baby actually uses real foods and at how that bioavailability is impacted by processing methods. Most nutrition studies focus on nutrients, but farmers, food processors, and consumers are concerned with food, not just nutrients. Bridging that gap is an important part of our work.

We are working closely with ARS scientists at other locations, and we are developing, as a byproduct of our need to grow food plants with labeled nutrients, some intriguing information on how food plants grow and use nutrients. We can study nutrient uptake and use on a whole plant basis, not just at the soil-root interface. We are also focusing on critical windows for fertilizer application to reach the seeds, rather than leaves or stem, due to the expense of stable isotopes and the need to use them efficiently. This has obvious implications for production agriculture. ARS rice researchers have new information to explore based on the CNRC's ability to grow rice hydroponically at about twice the yield gotten in the field. Rice is one of many crops where researchers have not established a theoretical maximum yield. As with the MRU, the basic Plant Physiology Unit facility is already in place but additional funds of \$2 million are needed to fully staff and operate it.



## **Cholesterol**

The CNRC cadre of multi-disciplinary efforts includes USDA scientists who are working with specially-bred pigs. Among other things, they are coming up with some intriguing finding on cholesterol. They have shown that cholesterol, which is absent from current infant formulas, is vital for brain development. Piglets from low-cholesterol bloodlines become retarded on low-cholesterol diets -- you can actually pick them up without any fuss.

While most human babies can apparently make their own cholesterol, the pig results indicate that the genetic potential may be present for problems among some humans. We also think that dietary cholesterol in infancy may improve the body's ability to handle cholesterol in adulthood. This work could lead to major changes in infant formulas and recommendations for dietary cholesterol early in life.

## **Breastfeeding**

The CNRC has been a leader in promoting breastfeeding for many years. Among other benefits, we have shown that feeding colostrum to newborn piglets gives a 700% increase in protein synthesis compared to those fed mature milk. CNRC scientists have also shown that the amino acid pattern in mother's milk is carefully tailored to the needs of the infant at any given age, and that this is true in many species besides humans. Infant formulas now in use seek to avoid shortages of any amino acid by providing about twice as much total protein as mother's milk. The baby must burn off the excess amino acids, which is one reason why formula fed babies have higher temperatures and heart rates, sweat more, etc. This line of research could lead to formulas that are better tailored to the age of the infant.

CNRC work has also proven that breast fed babies digest milk sugars more efficiently than do formula fed infants. A baby takes in about 3 times as much energy for its size as an adult does. A baby's colon acts like the rumen of a cow in fermenting and absorbing the extra sugar. This has implications in diarrhea treatment, for example, since diarrhea prevents the fermentation and sharply reduces the baby's energy intake.

## **Infant Formulas**

We are also working to improve infant formulas. Among other things, we are exploring differences in energy metabolism between breast and formula fed infants. Formula fed babies work harder, have higher temperatures and heart rates, and have different sleep patterns. We have already identified 2 growth factors in human milk, and one of these has already been licensed for studies that may lead to its addition to baby formula.

We are now working with Texas A&M University to make infant formula from labeled soybeans grown at the CNRC. We are also starting work with Cornell to put labeled nutrients into the artery leading to a cow's udder. This should not only tell us more about the cow's metabolism, but should also produce labeled milk which we can then make into formula. These labeled formulas can then be used in feeding studies to determine more precisely how babies use these foods to grow.

### Conclusion

Our mission is to find ways to produce healthier children today and healthier adults tomorrow. As a byproduct, these studies will also help the nation's agricultural industry to produce more efficiently, to document the nutritional value of their products, and to tailor those products as necessary to better meet the nutritional needs of future generations.

We thank the members of this Subcommittee for the strong support that you have given the CNRC in the past. You are making a significant investment in children, healthy children who will, in turn, have an opportunity to contribute to the future of this country. We urge you to continue that investment by increasing the Center's operating budget by \$5 million, to \$16 million, so that we can fully carry out our mission as defined by Congress.

## CHOCOLATE MANUFACTURERS ASSOCIATION

## STATEMENT OF LAWRENCE T. GRAHAM, PRESIDENT

Mr. Chairman and members of the subcommittee, my name is Lawrence T. Graham, and I serve as president of the Chocolate Manufacturers Association (CMA) and the National Confectioners Association (NCA). Together, the associations represent 97 companies that manufacture the vast majority of chocolate and non-chocolate confectionery in the United States.

The members of NCA and CMA come into contact quite frequently with the Food and Drug Administration, which has responsibility for regulating many of their activities. We are very aware of the important role the FDA has in protecting the welfare of the American public, and feel the agency has been inadequately funded in recent years to perform this valuable task.

However, we strongly disagree with the proposal of the Clinton Administration in the Fiscal Year 1994 budget to fund \$200 million of the FDA's budget through the imposition of new user fees on various industries regulated by the agency, including the food industry.

Last year, Congress approved the enactment of user fees for pharmaceutical companies in the Prescription Drug User Fee Act of 1992. However, those fees were specifically targeted to pay for speeding up the drug approval process. These new user fees to be imposed on the food industry would pay for FDA services that benefit the general public. Therefore, funds for carrying out those services should come from general appropriations. In 1974, the Supreme Court held in National Cable Television Association v. United States that user fees imposed under similar circumstances should instead be considered a tax on industry.

Because lower-income persons spend a much larger percentage of their disposable income on food products than do higher wage earners, these proposed fees should even more specifically be considered a highly regressive tax on the general public, as these additional costs are incorporated into the price to consumers. That aspect should especially be taken into account when these taxes on the food industry are being discussed by your subcommittee.

Allow me to reiterate: the members of the Chocolate Manufacturers Association and the National Confectioners Association consider the role of the Food and Drug Administration to be vital for the public at large, including the confectionery industry. We also feel the FDA has been inadequately funded over the years. However, the fact that the agency has been underfunded does not justify the imposition of an unfair user fee to solve that budget problem.

It is important to keep in mind also that having the FDA funded by the industries it regulates could do some harm to the public's confidence in the agency. That would be particularly damaging at a time when FDA will be involved with food safety matters, the implementation of the Nutrition Labeling and Education Act of 1990, and other pivotal food-related issues.

Please take each of these matters into consideration as you vote on the Fiscal Year 1994 budget for the Food and Drug Administration. Our associations firmly believe the imposition of the \$200 million in new user fees is bad public policy, and ask once again that you oppose their implementation.

Do not hesitate to let me know if there are any questions I can answer for you on behalf of the National Confectioners Association and the Chocolate Manufacturers Association.

## STATEMENT OF THE COALITION FOR FDA RESOURCES

Mr. Chairman, the Coalition for F.D.A. Resources is again pleased to offer you its recommendations on the FY 1994 appropriation for the Food and Drug Administration. We value your leadership on F.D.A. issues, formerly as a subcommittee member during Sen. Burdick's service, and currently as Chairman. We welcome the opportunity to work with you in strengthening this important agency.

The U.S. Food and Drug Administration stands astride a stream of commerce representing fully a quarter of consumer spending. The manner in which it carries out its duties affects innovation and financial viability in some of the most important and vibrant sectors in our economy, from food to biotechnology. As the Subcommittee is well aware, the agency merits the closest attention to its performance and resource needs.

Agency needs have outstripped available funds for many years, though much progress has been made recently. We are grateful for the Subcommittee's support of funding and personnel increases since the late eighties. Still, the number and complexity of product approval submissions continue to rise much more rapidly than the review resources available to process them. Further, Congress continues to add new legislative responsibilities without furnishing adequate funds for their implementation, though the President's \$10 million budget request for the Mammography Quality Standards Act of 1992 will hopefully mark a reversal in this trend.

The last Congress saw the enactment of the Prescription Drug User Fee Act of 1992, a measure which promised through additional resources to improve review performance for prescription drug and biological applications. While we had misgivings about the user fee approach, as communicated to this Subcommittee in years past, we hope that the safeguards it incorporates will, in practice, answer most of our concerns.

If this is to be the case, the User Fee Act's implementation will have to be monitored carefully. Already the Administration has given signals that it feels little constrained by the agreements among Congress, industry, and the last Administration which were crucial to the Act's passage. Early this year the Administration informally proposed to use for deficit reduction the \$54 million in user fees authorized by the Act, a step not only forbidden by the law itself, but one which would greatly increase the cynicism and distrust with which regulated industries would view the agency.

We were gratified when the President's budget instead made the \$54 million a genuine addition to the drugs and biologics review functions. If the agency can effectively manage this sizeable increase, it will be of tremendous significance in speeding the availability of new medicines to the public. We know that Commissioner Kessler is personally committed to achieving this result. However, we again urge the Subcommittee to monitor this process, to ensure that the funds are used to improve, not simply gild,

review activities. As the Act notes, the key measures of success must be reductions in product review times.

As the Commissioner noted in his testimony, a further concern is posed by severe problems with the review process at the Center for Devices and Radiological Health. For a variety of reasons, from changes in standards and leadership turnover to exhausting congressional oversight, the length of the review process for devices has soared. Many companies with important products before the agency have been reduced to desperation, while the public is denied the benefits of the latest research.

We are encouraged that the President's budget request includes \$20 million in "investment" funds for the Center to improve its performance. We strongly support this step and hope that it represents a more realistic approach by the Administration to undisputed agency needs. While we express confidence in the ability of the new director, Dr. Bruce Burlington, to lead the Center through these difficult times, we ask the subcommittee to monitor the process with bottom-line results in mind.

In this regard, the Administration's proposed personnel levels are especially disturbing. There is no question that reduction of review times for devices -- and for drugs and biologics as a result of the \$54 million in new user fee funds -- depends primarily upon the addition of large numbers of reviewers and support personnel. We recognize that not all of these funds should be targeted to personnel increases, and that there is a lag time between receipt of funds and the actual recruitment and hiring of new employees, but the addition of \$74 million for improving review times at the F.D.A. should at least add up to a sizeable f.t.e. gain for the agency. Likewise, additional personnel must be hired to implement the Mammography Quality Standards Act of 1992.

In this light, the Administration's proposal for a decrease in f.t.e.'s (a cut of 165, or 2 percent) is confusing and inappropriate. The only way to achieve such a figure is to spend a large portion of the drugs/biologicals/devices increases on non-personnel functions, and/or severely decrease the number of personnel in other agency functions. We endorse neither approach. The demands upon the F.D.A. in other areas of its responsibilities have also risen, and there is no justification for reducing personnel levels elsewhere.

Therefore, we ask the Subcommittee to specify f.t.e. levels which realistically correspond with the new funds which we hope will be granted to the agency, and which will ensure that the improvements in drug, biological and device review times actually occur. We believe that within the funding level proposed by the President, the F.D.A. can and should receive an additional 1000 f.t.e.'s. Of these, at least 300 are appropriate for drug and biologics review, 250 for device operations, and 65 for implementation of the Mammography Quality Standards Act of 1992.

A final troubling note is struck by the Clinton Administration's decision to adopt as its own the Bush



Administration's ploy of asking for massive substitutions of regularly appropriated funds by new user fees, the purpose of which is deficit reduction (\$200 million in the present budget request). The community of regulated industries and concerned professional and advocacy groups have unitedly and consistently opposed this approach. As we have stated before, this is bad public policy and risks great damage to the health and innovativeness of companies we all depend on for new medicines, devices, and food products. Further, use of this device would lower the F.D.A.'s base appropriation below the level required to enable the agency to collect the \$54 million in FY 1994 user fees authorized under the Prescription Drug User Fee Act.

In summation, the Administration request concedes the agency needs \$924.3 million (excluding reimbursibles) to fulfill its statutory responsibilities. While we feel the F.D.A. could profitably use more than this amount, we recognize the downward fiscal pressure on all federal programs, and we support the President's total. However, we are adamantly opposed to the proposal to substitute \$200 million of the F.D.A. budget with unauthorized user fee funds. We support the inclusion within the \$924 million of the User Fee Act's \$54 million only because it is additive to the baseline appropriation for the relevant functions.

We commend the Administration for recognizing that the agency needs significantly greater funding in drug, biologic and device review. We urge the Subcommittee to grant the F.D.A. \$924 million in appropriated funds for FY 1994, including \$54 million in user fee funds under the Prescription Drug User Fee Act of 1992 and \$65 million in "investment proposals". We also request that the Subcommittee specify an agency f.t.e. level of at least 9794, in order to ensure progress in bringing down product review times.

Thank you for your consideration of our views. We look forward to working with you to strengthen this vital public health agency.

The Coalition for F.D.A. Resources was formed in 1987 as an umbrella group for organizations concerned with adequate federal funding of the Food and Drug Administration. The Coalition feels that the F.D.A. is a critical national resource itself, and its efficiency, competence and credibility are vitally important to all Americans.

Current members are: the American College of Cardiology, the American Council of Independent Laboratories, the American Heart Association, the Animal Health Institute, the Council for Responsible Nutrition, the Generic Pharmaceutical Industry Association, the GPIA Animal Health Alliance, the Grocery Manufacturers Association, the Health Industry Manufacturers Association, the National Food Processors Association, the National Organization for Rare Disorders, the National Pharmaceutical Association, the National Soft Drink Association and the Pharmaceutical Manufacturers Association.

## STATE OF COLORADO

## STATEMENT OF HON. ROY ROMER, GOVERNOR

Summary of Requests

Colorado supports the U.S. Department of Agriculture Colorado River Salinity Control Program onfarm projects in our state and throughout the River Basin, and respectfully requests that Congress appropriate \$18,400,000 for this highly effective cost-share program in fiscal year 1994.

Introduction

This statement is submitted by the Honorable Roy Romer, Governor of Colorado; Mr. Ken Salazar, Executive Director of the Colorado Department of Natural Resources; and Daries C. Lile, Director of the Colorado Water Conservation Board, which is the state agency charged with the development of Colorado's water resources.

Colorado River Salinity Program Appropriation

The seven states of the Colorado River Basin have endorsed a coordinated, basinwide approach to the reduction of salinity in the Colorado River. The onfarm salinity control activities being planned and constructed by the Soil Conservation Service, other branches of the USDA, and the local cost-share participants are an integral component of the overall salinity control program. The Colorado River Basin Salinity Control Forum and Advisory Council, acting on behalf of the seven Basin States has submitted a detailed statement to this subcommittee. The Forum seeks, and Colorado supports, appropriations above the level provided last year.

The onfarm activities of USDA have recently become a major focus of efforts to reduce the salinity of the Colorado River. PL98-569, the 1984 Amendments to the Colorado River Basin Salinity Control Act, recognized the importance of onfarm salinity control activities and established specific line item funding for the federal share (49%) of this USDA program. Recent studies demonstrate the significant and cost-effective salt reduction achievable through onfarm irrigation improvements.

Three of the five current project sites are located in Colorado: Grand Valley, Lower Gunnison, and McElmo Creek. These voluntary programs are oversubscribed by farmers ready, willing, and able to make changes in irrigation practices and pay their fair share (30%) of project costs under the USDA program. Of particular concern to the State is that reduced levels of funding are preventing full realization of potential cost-effective salinity reduction by keeping willing participants on the sidelines. The situation in Colorado is being repeated elsewhere in the Basin.

The Colorado River Basin Salinity Control Advisory Council, established by the Colorado River Basin Salinity Control Act of 1974, consists of members from the seven Basin States, including Colorado. The Advisory Council is charged with making recommendations to the responsible federal agencies on appropriate means of controlling the salinity of the Colorado River. In its 1992 Annual Report, the Council finds that the USDA program needs minimum funding in FY 1994 of \$18.4 million to keep pace with the salinity reduction required to meet water quality criteria for the lower Colorado River. The Council appreciated the success of USDA salinity control efforts to date and strongly urged that \$18.4 million be appropriated, as the minimal funding required for the program to be successful in maintaining salinity within the federally mandated and state adopted numeric criteria.

The State of Colorado recognizes the extraordinary pressures on Congress and the President to resolve the difficult budget questions facing the nation. However, the onfarm salinity program has only recently entered its implementation stage and funding levels limited to earlier appropriation amounts will severely cripple this evolving effort.

Over the past few years USDA field personnel have nurtured that program and created widespread acceptance for it among local irrigators. Due to this planning an educational effort the onfarm program is beginning to reach its potential and to make significant contributions to improved Basin water quality. Funding at the level of previous years will keep many farmers from participating in a program in which USDA has already invested substantial time and money.

Further, as studies have repeatedly demonstrated, delays in implementation of salinity controls do not merely defer expenditures into future years, but result in the need for a larger, more costly overall program. This is a result of the increased accumulation of salt that enters the system during the period of delay. The Advisory Council's plan of implementation calls for further increments of increased USDA funding in FY 95 and 96. Shortages in FY 94 will only make the appropriation process that much more difficult in future years, and jeopardizes USDA's ability to achieve the salinity reduction potentially available and necessary to meet program objectives. The State of Colorado therefore urges that the full \$18.4 million necessary for USDA onfarm activities be appropriated in FY 1994.

Thank you for your assistance in this important program.

## COLORADO RIVER BASIN SALINITY CONTROL FORUM

### STATEMENT OF JACK A. BARNETT, EXECUTIVE DIRECTOR

Supporting funding for the Colorado River Salinity Control Program.

Total appropriation requested for USDA Onfarm Colorado River Salinity Control	\$18,400,000
---	--------------

---

In Fiscal Year 1993 the Congress provided \$13.78 million for efforts under the Department of Agriculture Colorado River Salinity Control Program. Studies by the Department of Agriculture and the Colorado River Basin Salinity Control Forum conclude that \$18,400,000 is needed in FY 94.

There is strong interest and active participation by farmers in the five areas where the program has been initiated. Even a stronger commitment by farmers to implement salinity control measures in the future is demonstrated by the large number of pending applications for participation. Irrigators in the Uinta Basin area of Utah, the Big Sandy River area of Wyoming, and the Grand Valley, McElmo Creek, and Lower Gunnison areas of Colorado stand ready to pay their requested share of the cost of this water quality control program, with benefits being felt hundreds of miles downstream in the United States and Mexico. In addition, the Department of Agriculture is ready to implement the Colorado River Salinity Control Program in the Moapa Valley area of Nevada.

#### DETAILS CONCERNING FUND ALLOCATION

The onfarm Salinity Control Program was initiated in the 1970's in the Grand Valley of Colorado and the Uinta Basin area of Utah with the use of Agricultural Conservation Program funds. With the enactment of legislation in 1984, a Colorado River salinity control program and funding line item were established and the program is now being implemented in these five geographic areas. Within all five areas, many contracts have been signed and many more contracts are being prepared. By the end of the current fiscal year, it is anticipated that all of the FY 93 funds will be designated for contracts and technical assistance. FY 93 funds will be totally committed while many additional basin farmers are ready to cost share and participate.

Two additional areas have been identified in Utah and Nevada as having very cost-effective salinity control onfarm program potential, and they are included within the overall plan of implementation approved by the Forum, the Basin states, and EPA. It is planned that the next onfarm salinity control effort will be in the Moapa Valley of Nevada, and this effort could begin this next fiscal year. Under study is the Price-San Rafael area of Utah. These much-needed water quality programs can only move ahead with adequate Federal funding. The Basin states and the local farmers have funds ready to proceed with this partnership and pay at least 51 percent of the cost of the onfarm construction program.

Joint studies, in part required under the Clean Water Act, conducted by several federal agencies and the seven Colorado River Basin States have determined the amount of salt which must be removed to continue to assure compliance with water quality standards. Jointly adopted plans identify the role of various agencies of government to remove the needed amount of salt. The role of the Department of Agriculture is most important, and the funding in FY 94 for this program is essential.

## JUSTIFICATION

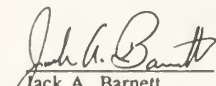
The water of the Colorado River provides municipal and industrial water for 18 million people and irrigation water for 1.7 million acres in parts of the seven Colorado River Basin states. The River also provides domestic and irrigation water to Mexico. Salinity has long been recognized as one of the major problems in the River. Water users in the lower reaches of the River system have suffered significant adverse impacts due to the River's salinity. These impacts have been estimated to have exceed \$300 million a year to United States water users. Without the salinity control measures, the salinity of the River is projected to increase beyond the water quality numeric criteria, with continued development of the compact-apportioned waters. Without the necessary salinity control measures, the economic damages suffered by the water users could double by the turn of the century.

The Basin states' concern with the River's increasing salinity led them to create the Colorado River Basin Salinity Control Forum in 1973. The Forum, whose members are appointed by the governors of the respective states, developed a salinity control policy that stated that while the Basin states continue to develop their compact- apportioned waters, salinity concentrations must be maintained at or below those levels found in the lower River in 1972. This salinity control objective is the Basin states' adopted, EPA-approved water quality standard for the Colorado River. The standard was adopted pursuant to the Clean Water Act. The policy forms the basis for the cooperative federal/state, Basin-wide salinity control plan. The Forum has a continuing responsibility to see that a salinity control plan is implemented to meet the policy objectives.

After discussions involving the Federal Government, the Republic of Mexico, and the seven Colorado River Basin states, the Congress enacted in 1974 the Forum-sponsored Colorado River Basin Salinity Control Act (P.L. 93-320). Title I of the Act established a program to reduce the salt concentrations below Imperial Dam (the last diversion point on the Colorado River in the United States), so that the United States could honor its 1973 agreement on Colorado River salinity with Mexico. Title I was identified by Congress as a federal commitment. The Act established a program, Title II, which directed the States and the Federal Government to work together to prevent salinity increases in the Colorado River above Imperial Dam, benefitting users in the United States as well as Mexico. The 1974 Act also created a Colorado River Basin Salinity Control Advisory Council, composed of gubernatorial representatives of the Basin states, to advise the Secretaries of the Interior and Agriculture and the Administrator of the Environmental Protection Agency as to needed annual adjustments to the salinity control effort. The appropriations recommended in this testimony by the Forum are in accordance with the Advisory Council's written recommendations to these federal officials.

In 1984 the Congress enacted much-needed amendments to the 1974 Act in response to issues first raised by the Forum. The amendments resulted in Public Law 98-569, which authorized additional Department of the Interior and Department of Agriculture activities needed to meet the objectives. In recognition of the proven cost-effectiveness of Agriculture's onfarm management activities in controlling the river's salinity, a separate Colorado River Basin onfarm management salinity control program was authorized for the Department of Agriculture.

Should necessary funding levels in Fiscal Year 94 and future years not be provided for the Colorado River Salinity Control Program, the probability of the water quality numeric criteria being exceeded in the future is greatly increased. Further, less than adequate funding today will unquestionably result in significantly higher future costs to implement the same level of salinity control. The Forum urges that due consideration be given to these factors as the Committee recommends the FY 94 funding level for this program.



Jack A. Barnett  
Executive Director



## STATEMENT OF THE CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS

Mr. Chairman and Members of the Subcommittee. The Consortium of Social Science Associations (COSSA) represents over 90 professional associations, scientific societies, and educational institutions, and serves as a bridge between the research community and the Washington policymaking community. A list of our Members, Affiliates, and Contributors is attached to this testimony.

This testimony will discuss the contributions and needs of the social scientists who focus their professional activities on the problems and opportunities facing agriculture and rural America. COSSA appreciates the opportunity to present our views on the budget for the Cooperative State Research Service, in particular, the National Research Initiative Competitive Grants program (NRI) and the budget for the Economic Research Service.

For the NRI component of the CSRS, COSSA urges full funding of the President's request of \$130.2 million. For the ERS, COSSA urges rejection of the President's proposed cuts and restoration of funding to the FY 1993 level of \$59 million.

### CSRS and NRI

COSSA fully supports the NRI administered by the CSRS and is grateful to the Subcommittee for the appropriations in FY 1992 and 1993 to the social science component called "Markets, Trade and Policy (MTP)." This funding was a significant initial step in bringing a national research focus to trade and rural policy issues. However, the \$4 million appropriated in both those years is only 4 percent of the total funding for the NRI. This is hardly in proportion to the mix of troublesome social and economic issues facing rural America. Therefore, COSSA recommends that the renamed Rural Development, Markets and Trade (RDMT) component of the NRI be increased to the President's requested level of \$7 million in FY 1994.

The RDMT part of the NRI includes research expectations across an extremely broad range of subject matter. In the Markets and Trade area, studies are requested to identify, describe, and quantify the size of potential international markets for agricultural products, to determine private or institutional impediments to entry or expansion into international markets, to ascertain the sensitivity of U.S. export activity, to determine deficiencies in the agricultural labor force, to assess the availability of capital and credit, to identify transportation infrastructure problems, and to evaluate the adequacy of technology information.

In addition, the rural development research program seeks studies on how to improve the social and economic well being of rural families and communities, to identify forces that influence population change, employment, wage levels, and other indicators of social and economic viability, to assess the influence of particular agricultural, fiscal, monetary, trade, labor, industrial, and environmental policies and programs, and how to diversify the economies of rural areas. Both these research programs present a long list of needed information, but very few dollars to provide the information.

COSSA also supports the report language included in FY 1993 by the Senate appropriations committee asking that in each of the other five research components of the NRI, "a portion of the funds provided should be used to help identify the social,

economic, and environmental impacts of alternative research directions and to identify research directions consistent with the full range of research goals."

President Clinton has proposed to significantly increase the NRI over the next five years. According to A Vision of Change for America, the administration supports increased funding for the NRI of \$188 million over the next four years. The issues studied by social and behavioral scientists through NRI grants are important to the revitalization of rural America the President and the Congress so avidly seek. For example: researchers at Iowa State University are examining the impact of minimum wages on rural retail and service sector labor markets; a researcher at Cornell is probing the impact of small manufacturing firms on rural and regional industrial development; and a researcher at Texas A&M University is looking at the opportunities for entrepreneurship among Mexican-Americans in non-metropolitan areas in the Southwestern United States.

In 1992, COSSA along with the Rural Sociological Society, the Congressional Rural Caucus, and Representatives David Price, Charlie Rose and Rick Boucher, sponsored a congressional seminar on "Rural Policies for the 1990s." At that breakfast meeting, speakers noted the current state of rural America. Ron Wimberley, then-president of the Rural Sociological Society, pointed out that although 62 million Americans are defined as living in rural areas, a record high, only 1 in 15 rural residents lives on a farm. This necessitates the development of a rural policy separate from an agricultural policy.

A recent report by the General Accounting Office Rural Development: Rural American Faces Many Challenges, echoed many of the same arguments made at the seminar: The issues of rural America are issues of human resource allocation, empowerment, economics, "people related" problems such as education and health care, and environmental problems. All of these are addressed by social and behavioral science researchers.

Cornelia Flora of Virginia Tech University and co-editor with Jim Christenson of the University of Arizona of a book Rural Policies for the 1990s, noted that "whereas the 1970s was the decade of rural renaissance and turnaround, the 1980s was the decade of rural decline and turnback."

The decade of the 1980s was one of tremendous change for agriculture and for rural America. The prosperity of previous decades suffered the intrusion of widely reported social, economic, and environmental problems. These included a "farm crisis" in the Midwest, economic and ecological dislocations in the timber-producing Pacific Northwest, malaise in the dairy industry throughout most of the nation, and the continued decline in both farm and non-farm employment in most rural areas.

In 1987, the Experiment Station Committee on Organization and Policy (ESCOP) commented on these trends: "We live in a time when agriculture and the rural economic bases in mining, fisheries, forestry, and natural resource extraction are experiencing major social and economic changes. The farm and rural crises of the 1980s are not short-term aberrations, but symptoms of long-term trends that were partially hidden by the relatively few good times for agriculture and rural areas in the 1970s."

Perceptions of these changes were not lost on the agricultural leadership within the U.S. Congress when it reauthorized the programs of the U.S. Department of Agriculture

(USDA) in the "Food, Agriculture, Conservation, and Trade Act of 1990" (FACTA). It said that:

"Federally funded agricultural research and extension programs shall be designed to, among other things, accomplish the following:

-- enhance the long-term viability and competitiveness of the food production and agricultural system;

-- expand economic opportunities in rural America and enhance the quality of life for farmers, rural citizens, and society as a whole;

-- develop information and systems to enhance the environment and the natural resource base upon which a sustainable agricultural economy depends."

Against this background, significant increases might have been expected in funding for social science research focusing on the environmental, health, community, economic, and family problems associated with these trends. This was not the case. Funding for rural and agriculturally related social science research remains below the level sufficient to respond to the problems facing rural America and American agriculture. The problems have changed, but the mix of research and rural development efforts to solve them has not.

Interest in economic revitalization and the restoration of quality of life to all Americans has risen recently and there is a clamor for change. COSSA recognizes that the competition for federal funding against the need to control spending presents a difficult set of choices for the Congress. However, almost 30 years ago a USDA report on rural America was entitled "The People Left Behind." The people of rural America are again in danger of being left behind in the promised economic recovery. Support for social science research has not kept pace with emerging rural issues and problems, and it has not kept pace with production research in agricultural plant and animal sciences. It is time to change our investment policy for research focused on rural needs at a national level.

A few words about Special Grants: Because the social science component of the NRI was so minuscule, social scientists examining the problems of rural America, like others, have sought and received special grants. A number of these grants serve a national purpose, impact overall rural policy and involve researchers from many disciplines working together to provide information to help revitalize our nation's rural areas. We think it would be a disservice to eliminate this funding at this time.

These projects include: four regional centers for rural development, judged by a recent panel of experts for their significant accomplishments in coordinating and integrating solutions to regional and multi-state rural development problems and who recommended increased funding; the Rural Policy Research Institute (RUPRI), an interdisciplinary social science research consortium of four universities conducting quick turn-around research and long-term basic studies of rural communities and the rural economy; the Food and Agriculture Policy Research Institute, a two university center that helps the RUPRI integrate general rural policy and farm policy issues.

In a recent statement the Board of Agriculture of the National Association of State Universities and Land Grant Colleges advised the new Secretary of Agriculture: "The

extension, research and education efforts of the USDA should emphasize rural development and revitalization as well as an environmentally sound and internationally competitive production agriculture. The USDA must now respond to the greater and more complex issues of agriculture, environment, and social/economic rural infrastructure." The social and behavioral science research agenda for rural America fits squarely with this advice. It deserves significant Congressional support.

#### Economic Research Service

The administration proposes to reduce funding for the Economic Research Service (ERS) because it claims that much of its work duplicates that of other USDA bureaus. We believe this is not the case.

ERS serves a unique purpose. It provides the economic information base on which the nation's food and agricultural system operates. This information provides policymakers, farmers, and others the knowledge to make decisions to improve the effectiveness of the agricultural economy.

The ERS produces a host of economic and social indicators on topics such as agricultural land values, the costs of production, nonmetropolitan area earnings, per-capita food expenditures, and world trade in agricultural commodities. A recent report of the General Accounting Office on "Rural Development: A Profile of Rural Areas," utilizes data produced by ERS.

ERS has an important role to play in developing information on in-depth agricultural trade policy of foreign countries. These provide the knowledge for negotiators involved in the GATT round and the development of NAFTA.

The rural development efforts of ERS help generate information to help the state rural development councils assess rural conditions and provide a research-based analysis of future opportunities and challenges.

Do not sacrifice the ERS' unique research capacity. Restore its funding to sufficient levels for it to carry out its responsibilities.

Thank you for the opportunity to present our views.

## MEMBERS

American Anthropological Association	American Psychological Association	Association of American Law Schools
American Economic Association	American Sociological Association	Law and Society Association
American Historical Association	American Statistical Association	Linguistic Society of America
American Political Science Association	Association of American Geographers	
AFFILIATES		
American Assembly of Collegiate Schools of Business	International Studies Association	Society for Research in Child Development
American Association for Public Opinion Research	Midwest Sociological Society	Society for the Advancement of
American Educational Research Association	National Council on Family Relations	Socio-Economics
American Society of Criminology	North Central Sociological Association	Society for the Scientific Study of Religion
Association for Asian Studies	Operations Research Society of America	Society for the Scientific Study of Sex
Association for Social Sciences in Health	Population Association of America	Southern Sociological Society
Association of Research Libraries	Rural Sociological Society	Southwestern Social Science Association
Eastern Sociological Society	Social Science History Association	Speech Communication Association
History of Science Society	Society for Research on Adolescence	The Institute for Management Sciences
CONTRIBUTORS		
American Council of Learned Societies	University of Illinois	Ohio State University
American University	Indiana University	University of Oregon
University of Arizona	Institute for Social Research, University of	Pennsylvania State University
Arizona State University	Michigan	University of Pittsburgh
Brookings Institution	University of Iowa	Princeton University
University of California, Berkeley	Johns Hopkins University	Purdue University
University of California, Los Angeles	Kansas State University	University of Rhode Island
University of California, San Diego	Massachusetts Institute of Technology	Social Science Research Council
University of California, Santa Barbara	Maxwell School of Citizenship and Public	University of Southern California
Carnegie-Mellon University	Affairs, Syracuse University	State University of New York, Stony Brook
Center for Advanced Study in the Behavioral Sciences	University of Michigan	Temple University
University of Chicago	Michigan State University	University of Tennessee
University of Cincinnati	University of Minnesota	University of Texas, Austin
University of Colorado	National Bureau of Economic Research	Texas A & M University
Cornell Institute for Social and Economic Research	National Opinion Research Center	Tulane University
Cornell University	University of Nebraska	University of Washington
Duke University	New York University	University of Wisconsin, Madison
Emory University	University of North Carolina, Chapel Hill	University of Wisconsin, Milwaukee
University of Georgia	North Carolina State University	Yale University
Harvard University	Northwestern University	



## COUNCIL FOR AGRICULTURAL RESEARCH, EXTENSION AND TEACHING [CARET]

### STATEMENT OF ROBERT L. KIDD, CHAIRMAN

Mr. Chairman and Members of the Subcommittee, I am pleased to appear before you today to offer comments on the agricultural research and education programs of USDA and the land-grant university system. My name is Robert Kidd. I am from Wyoming where I am involved in ranching and agricultural exports. I currently serve as the chairman of the Council for Agricultural Research, Extension and Teaching (CARET). CARET is a national voluntary citizens organization whose membership is comprised of such individuals as agricultural producers, commodity leaders, agribusiness leaders, state and local officials, homemakers, consumers and members of agricultural advisory boards. Each state and territory is represented by at least one delegate. CARET was established in 1982 as a mechanism through which citizen support could be expressed for the agricultural research, extension and teaching programs of the land-grant university system.

In his recent State of the Union Address, President Clinton stated that the land-grant system is one of our nation's greatest success stories. This system of higher education does what most others do not: it develops its programs -- most particularly within its agricultural research, extension and teaching programs -- to respond to the needs of the people resident within each individual state and territory. These programs respond to the input from advisory boards and user groups, such as CARET, so that the people's needs can be met. This level of accountability is what makes the land-grant university system so different from all other university systems. This is indeed a system which can deliver solutions to many of the problems facing the American people both today and in the future.

Today, I would like to share briefly with you CARET's priorities regarding these programs. CARET's number one priority has always been and remains the base program funding for Hatch, Smith-Lever, the 1890s, McIntire-Stennis and Morrill-Nelson. These programs provide the essential infrastructure for what constitutes the core of the agricultural research and education programs of the land-grant university system. Without this base, the land-grant system would not be in a position to respond to its mandate to transfer new knowledge and technology to those in the food and fiber system, rural America and increasingly to those in our nation's urban centers.

Unfortunately, over the past decade this success has been jeopardized because funding for these programs has not kept pace with inflation. This decline in real dollars has resulted in severe staff and program reductions in most states. There is, at this juncture, an urgent need for these base programs to receive at least a five percent increase over current funding levels in order to strengthen and minimally boost current capacity. Further decline would seriously impair the land-grant system's ability to meet the needs of the people it is mandated to serve.

Besides the base programs, CARET supports several priority initiatives: (1) the competitive grants program, also known as the National Research Initiative; (2) the Extension initiatives such as Sustainable Agriculture, Youth at Risk, Rural Economic Development, nutrition programs; (3) and the higher education initiatives of Institutional Challenge Grants, Minority Scholars, Graduate Training Fellowships and 1890 Capacity Building Grants; and (4) the inclusion of an international component in these agricultural research, extension and education programs.

(1) The National Research Initiative allows for important and necessary basic research to be undertaken. This is the research that provides the basis for further investigation into such things as bio-controls that allow plants to naturally repel pests, thus reducing the need for pesticides. Through research alternative fuels can be developed and perfected creating both cost saving measure for farmers and increasing their profitability. The National Research Initiative also allows for important multi-disciplinary research to be undertaken.

(2) Extension is one of the most effective outreach systems in the United States. Technological advances are effectively transferred from the laboratory to the field, home or community. With new knowledge and technology continually being developed, an educational transfer mechanism is vital for the members of our communities. The Extension System is seeking to launch several new programs, including Sustainable Agriculture, Rural Economic Development and targeted programs such as Teen Pregnancy and Health in the 1890 community. Continuing programs of importance include EFNEP, Youth at Risk, and Indian Reservation Extension Agents. Each of these programs seeks to address problems and challenges facing people across America. They have been identified as needs by the actual people living in our communities.

(3) The key to sustained scientific advancement is the strength of our human resource capacity. The academic programs of the land-grant university system offer unique opportunities for highly qualified students to continue in agriculture and become the important conduits to future knowledge and programs. To date, these programs have not received an adequate level of funding. But the funding of a Minority Scholars Programs, and increasing the funding for the Institutional Challenge Grants and the Graduate Training Fellowships there is a future for agriculture because bright minds will be engaged in agriculture.

(4) Essential to our nation's ability to compete in a global economy is a firm and productive understanding of that economy. In the 1990 farm bill, Congress authorized an enlarged role for agricultural research and education programs in terms of collaboration with institutions throughout the world which are engaged in related activities. The inclusion of an international dimension of in agricultural research and education, not as a separate component, but fully integrated into these activities is a necessity. With other countries becoming more and more competitive in agriculture, the United States needs to make an investment in agricultural research, extension and teaching so that our nation can remain the strong competitor it is.

Mr. Chairman, we understand the budget constraints under which you and your colleagues are operating. And we understand the numerous demands being put to you. We in CARET do believe, however, that the land-grant university system can assist you in responding to many of these demands such as a safer food supply, a protected environment, and economic development in our nation's rural communities. The land-grant system is prepared to work more closely with you. We in CARET would urge for you to use this system more fully in order to meet many of the challenges being put to you.

Attached to my testimony is a short listing of ways in which land-grant universities have helped over the years. I include these examples so that you can appreciate the depth and breadth of these programs and how, in many instances, we have come to take for granted the enormous contributions made by these universities.

Also attached to my testimony is a copy of the FY94 budget recommendations of the Board on Agriculture of the National Association of State Universities and Land-Grant Colleges (NASULGC) which CARET enthusiastically endorses and into which CARET has had significant input. We submit these recommendations for your consideration.

Mr. Chairman, thank you for this opportunity.

## DELTA COUNCIL

## STATEMENT OF T.S. SHULER, PRESIDENT

Mr. Chairman and members of the Committee:

My name is T.S. Shuler and I currently serve as President of Delta Council, an area economic development organization representing Northwest Mississippi, where more than \$2 billion of agriculture production occurs annually. Also, it is in the Delta Council area that the world-renowned Stoneville Research Center, serving the entire mid-south United States, is located on more than 2000 acres of experimental research land which has been purchased by farmers and deeded to the Land Grant University System and USDA for experimental plots. At no other agriculture research location in the world are there more applied sciences being practiced at one center.

We would like to express our gratitude to the appropriations committee for its long standing support of public-sector research initiated by the land grant system and the USDA. Had it not been for the strong resolve and support demonstrated by this committee during the past decade, the technology which has made U.S. Agriculture the envy of every other industry in the nation and around the globe, would have suffered dramatically due to proposed budget cuts. It is especially important to midsouth agriculture that your committee continue to uphold this level of commitment so that continued gains can be registered in production efficiency, cost efficiency, and world-price competitiveness. In three of our major crops grown in the Mississippi Delta area we have experienced unprecedented increases in production capabilities, as indicated by Table 1 (see attached). It should be noted that these gains in production values outlined in Table 1 have been accomplished through increased yields and at a time when acres have not been expanded dramatically in any of the crops, except catfish. The price of all three major Delta commodities of cotton, rice, and catfish have remained low during this time, also.

The value of agriculture production in our region, and its terrific impact on all allied agricultural businesses in the further-processing, marketing, distribution, and transportation chain is the greatest testimony to true rural development. It should be recognized that if it was not for the support of this appropriations committee, this tried and proven rural development stimulus would not have been possible.

In the interest of brevity, we would like to request that the committee carefully examine the enclosed attachment of appropriations initiatives that have been supported by this committee in the past and we respectfully request your continued support for them. We appreciate the opportunity to enroll our testimony as part of the appropriations process.

DELTA COUNCIL  
APPROPRIATIONS PRIORITIES - FY 1994

AGRICULTUREA. Agriculture Research Service

	<u>FY'93</u>	<u>FY'94</u> (request)
Soybean Research	525K	525K
NW Aquaculture Center		
Operations	500K	1.0M
Construction	930K	2.5M
Water Quality	(language)	(same as '93)

B. Cooperative States Research Service

	<u>FY'93</u>	<u>FY'94</u> (request)
Aquaculture	700K	700K
Rural Revitalization	175K	175K
MVSU	688K	688K

C. Extension Service

	<u>FY'93</u>	<u>FY'94</u>
Crop Simulation	498K	498K

D. APHIS

	<u>FY'93</u>	<u>FY'94</u>
Boll Weevil	455K	455K

E. Soil Conservation Service

	<u>FY'93</u>	<u>FY'94</u>
Delta Study	100K	800K
Deer Creek	200K	200K

## DELTA WESTERN, INC.

STATEMENT OF LESTER W. MYERS, PRESIDENT AND GENERAL  
MANAGER

Mr. Chairman and other Members of the Subcommittee, thank you for the opportunity to present testimony on behalf of the five Regional Aquaculture Centers. My name is Lester Myers, and I own and operate a catfish farm near Inverness, Mississippi, and also am President and General Manager of Delta Western, Inc., Indianola, Mississippi, the largest catfish feed mill in the United States. It has also been my pleasure to serve as Chairman of the Industry Advisory Council for the Southern Regional Aquaculture Center since it began operation in 1987.

Those of us representing the aquaculture industry throughout the U.S. have been impressed with the programs of the Regional Aquaculture Centers. Their structure provides opportunities for producers at the grassroots level to have direct and significant inputs into these programs including identification of key issues that are of critical importance to our industry. Through this procedure, research and extension scientists learn first-hand what is needed in order for us to stay in business. We commend the foresight Congress had when they authorized the establishment of the Regional Aquaculture Centers.

Throughout the U.S., thousands of aquaculture producers depend heavily on information from aquaculture scientists. All segments related to our industry must rely on up-to-date research information if U.S. aquaculture is to reach its maximum potential. In 1992, the Joint Subcommittee on Aquaculture estimated the value of U.S. aquaculture production as follows: catfish--\$452 million; trout--\$70.8 million; baitfish \$55 million; crawfish--\$31.7 million; and ornamentals \$53 million. All of these species are grown in our region. Nine other species grown in the U.S. have an estimated combined farm value of approximately \$176 million. However, all producers are facing serious economic problems. High costs of production, low prices for products sold, and our nationally depressed economic conditions require that much more technological information be available to producers and processors. Lower production costs are absolutely essential. Improved production practices to increase profitability of U.S. production will also help reduce our country's dependence on aquaculture imports.

Several of the multi-year projects recently completed by the Regional Centers have provided very useful information on nutrition, reproduction, marketing strategies, water quality management, and disease prevention as well as many other important phases of production. Information developed from these studies is currently being disseminated by educators through on-farm demonstrations and regional workshops. Numerous publications and videos are available from these programs which provide excellent support information for all aquaculturists.



Through the Center programs in the Southern Region, we have completed seven multi-year projects and currently have seven on-going projects, most of which are three-year duration. These include studies on the effects of nutrition on product quality; harvesting technology to reduce production costs in catfish and crawfish; quality assurance for aquaculture products from microbiological and residues standpoints; characterization of finfish and shellfish aquacultural effluents; development of new educational materials for beginning and experienced producers; and avian predator management. The U.S. aquaculture industry will benefit tremendously from these efforts, as well as from other projects that are initiated each year. Similar progress has been accomplished by each of the five Regional Centers.

In summary, those of us representing the aquaculture industry continue to feel that significant benefits are resulting from these Regional Center programs. The interest among U.S. aquaculture scientists to work cooperatively on projects developed by these programs has been exceptionally good, and they have produced very positive results beneficial to our industry. We are convinced that additional valuable information will be forthcoming from these programs if increased funding is made available.

The authorized level of funding for the five Regional Centers is \$7.5 million. The total amount appropriated for the Centers for FY 93 was \$4.0 million or \$800,000 per Region. We strongly request your consideration of the 1994 FY budget to provide the \$7.5 million full authorized level of funding for the five Regional Aquaculture Centers. We genuinely appreciate this and other valuable support you have previously provided our industry.

We appreciate the opportunity to offer these comments of support for the Regional Aquaculture Center programs.

Thank you.

EASTERN SOUTH DAKOTA SOIL AND WATER RESEARCH FARM,  
INC.,

## STATEMENT OF MARK STIME, PRESIDENT

We respectfully request your assistance in meeting the highest priority challenges of rural America and helping us build a prosperous and sustainable agriculture which will continue to serve as the foundation of the United States economy. We are a nonprofit organization, founded in 1959 and governed by a board of elected directors from 15 soil and water conservation districts in eastern South Dakota. Our membership of farm and urban Americans promotes soil and water conservation in eastern South Dakota and the surrounding region.

Our members are deeply concerned about the economic and social vitality of rural America, especially the natural resource base that supports agriculture and rural life. Agricultural producers are increasingly challenged to produce food of higher quality at lower cost without adversely affecting the environment and our natural resources, especially soil and water. In meeting this challenge, we must dramatically expand agricultural research that is directed at more efficient agrichemical use, improved cultural practices, and decision aids that incorporate environmental, pest, natural resource, cultural, and economic variables.

Research is key to developing an economically and environmentally sustainable agriculture. Our organization has sponsored and promoted agricultural research through the private purchase and development of a research farm located near Brookings, South Dakota. Our 80-acre farm serves as a unique center in the Northern Great Plains for multidisciplinary agricultural research and effectively combines expertise of three research units: two of the USDA-Agricultural Research Service and the South Dakota Agricultural Experiment Station. Through the cooperation of these research groups and guidance from our membership, we are researching practical solutions to our farming and conservation problems.

We strongly support the mission of the USDA, Agricultural Research Service, especially the Northern Grain Insects Research Laboratory of Brookings, South Dakota, and the North Central Soil Conservation Research Laboratory of Morris, Minnesota. We are impressed with the research programs at these two laboratories. For example, at the Northern Grain Insects Research Laboratory, development of new control strategies for corn rootworms and cereal aphids will significantly reduce insecticide use for two major U.S. field crops. At the North Central Soil Conservation Research Laboratory, researchers are developing a decision-aid computer software, FARMBOOK, that will integrate soil-crop-climatic-machinery variables to assist farmers in making cost-effective and environmentally sound decisions. While we are encouraged by the progress in these programs and other important projects at these laboratories, additional resources are needed.

The Eastern South Dakota Soil and Water Research Farm, Inc. respectfully requests an additional \$1,500,000 for the USDA, ARS, Northern Grain Insects Research Laboratory, Brookings, South Dakota, to support expertise in weed science, stress climatology and physiology, agronomy, and integrated pest management. This additional expertise will complement the current staff and enable a holistic approach to improving the long-term sustainability of agriculture through reduced pesticide use and improved cultural and cropping practices.

We also respectfully request an appropriation of \$2,975,000 for an approved facilities expansion at the North Central Soil Conservation Research Laboratory, Morris, Minnesota, and the release of \$825,000 appropriated in FY 92

for phase 1 of this project. This expansion is essential to several high priority programs and will greatly facilitate important efforts in technology transfer.

We urge you to seriously consider our requests. With your help and that of our cooperators in the Agricultural Research Service and South Dakota State University, we can conserve our resources that are essential to a sustainable and productive agriculture on the Northern Great Plains.

# FEDERATION OF AMERICAN SOCIETIES OF FOOD ANIMAL SCIENCES

## STATEMENT OF ROBERT G. ZIMBELMAN, EXECUTIVE VICE PRESIDENT

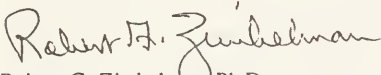
In accord with your letter of March 5, 1993 indicating that you would receive testimony until May 31, 1993, the following testimony is provided on behalf of the Federation of American Societies of Food Animal Sciences (FASFAS). The enclosed brochure shows how animal agriculture has reached a consensus with its various constituencies to define research priorities to meet societal needs. This is the fruit of a workshop held in October, 1992 that included animal scientists, veterinarians, producers, food technologists and consumer groups. They set an agricultural research agenda for the next few years. This effort represents the first time that animal agriculture constituencies have discussed and refined a research agenda. It gives the Senate Appropriations Committee assurance that the funds will be well spent appropriately to meet the goals of society.

FASFAS participates with coalitions to assist your committee with its very challenging task of deciding how to allocate funds. By presenting consensus positions, such coalitions should help you to sort through conflicting positions. FASFAS participates with the Coalition on Funding Agricultural Research Missions (CoFARM), a coalition of professional societies spanning the spectrum of agriculture including plants, animal microbes and food technology, in addition to the National Association of State University and Land-Grant Colleges (NASULGC) and their planning committees. In particular, we fully support the following items:

- o Animal Systems in NRI funded at \$37 million - consistent with the CoFARM recommendation.
- o Nutrition, Food Quality and Health in NRI funded at \$17 million - consistent with CoFARM recommendation.
- o Animal Health Base Program (Section 1433), \$5.828 million - consistent with the NASULGC recommendation.
- o Special Research Grants - National Programs - (Section 1414-2C), \$3 million for Animal Health and \$3 million for Animal Well-being - consistent with the NASULGC recommendation.
- o Minor Use Animal Drugs \$650,000 - consistent with the NASULGC recommendation.
- o Other Research Programs, Sustainable Agriculture - \$10 million for Research and \$10 million for Extension to be allocated towards integrated management programs mandated in Chapters 1, 2, and 3 Title XVI of the FARM Bill - consistent with the NASULGC recommendation.

We trust that the focus on societal goals when setting animal agriculture research priorities is consistent with the goals of the administration and will justify expending federal funds to meet the goals of the society. We request that you seriously consider these plans and the needs of the animal agriculture community and that you reward such broad planning efforts with increased funding. During a time of budget restraint, few topics hold more potential toward meeting societal needs as does an affordable, safe supply of animal foods for citizens of our great nation and our neighbors throughout the world.

Sincerely,

A handwritten signature in dark ink, reading "Robert G. Zimbelman". The signature is fluid and cursive, with the first name "Robert" and last name "Zimbelman" clearly legible.

Robert G. Zimbelman, Ph.D.  
Executive Vice President  
American Society of Animal Science

[CLERK'S NOTE.--The brochure referred to in Mr. Zimbelman's statement does not appear in the hearing but is available for review in the subcommittee files.]



## STATEMENT OF THE FOOD ANIMAL CONCERNS TRUST

Contamination of foods by pathogenic bacteria such as Salmonella, Campylobacter, and E. coli now causes widespread illness in the United States. Conservative estimates place the number of Americans stricken by food-borne microbial illness at between 6.5 and 33 million each year, costing the nation billions of dollars in health care, personal suffering, and lost productivity.

Cases of Salmonella poisoning have more than doubled since the early 1970s. Campylobacter is now the most common cause of acute bacterial gastroenteritis and infectious diarrhea in the U.S. E. coli 0157:H7, the newest and deadliest of the bacteria to attack the nation's food supply, demonstrated its ability to become a critical public health problem only too well during the outbreak earlier this year in the Pacific Northwest.

Food Animal Concerns Trust (FACT), a publicly-supported not-for-profit organization concerned with food safety and agricultural practices, commends the Department of Agriculture and its Food Safety and Inspection Service for the long-range plan to control food-borne pathogens unveiled in the wake of the recent E. coli outbreak.

The preventive approach embodied in the Pathogen Reduction Program and the Track II outline for the future represent the most significant improvements in food safety in the Department's history. Particularly vital to reversing the spread of food-borne illness are the introduction of microbiological standards and testing, and the development of on-farm pathogen control programs.

FACT urges the Subcommittee to support appropriations needed to carry out the Department of Agriculture's bold new bacterial control agenda.

## FOOD ANIMAL PRODUCTION MEDICINE CONSORTIUM

STATEMENT OF DR. JERRY R. GILLESPIE, PROFESSOR AND HEAD  
DEPARTMENT OF CLINICAL SCIENCES, KANSAS STATE  
UNIVERSITY, AND PRINCIPAL INVESTIGATOR

SUBJECT: Pre-Harvest Food Safety; a practical and efficient approach to limiting or eliminating biological and chemical contamination of food

Mr. Chairman and members of the Subcommittee, I am pleased to have this opportunity to present a written statement on behalf of the FAPMC. We acknowledge and appreciate the Committee Members' interest in improving human health, sustaining agricultural resources, and improving agricultural's long-term competitiveness and profitability by exploring new ways to improve our current food inspection programs.

The Food Animal Production Medicine Consortium (FAPMC) represents faculty and staff from six Land-Grant Universities<sup>1</sup> who joined together in 1988 to improve the quality and efficiency with which we address our universities' missions: 1) veterinary education in the area of food animal medicine, food safety and public health, 2) on-farm food safety research, 3) animal health and natural resource management research, and 4) clinical service to animal agriculture. These missions are interdependent, and our overall task is to improve food safety, reduce the incidence and cost of animal diseases, preserve natural resources and help build a sound economic base for animal agriculture. The FAPMC's teaching programs and joint research programs have been extraordinarily successful because of the diverse animal agriculture served by these universities and the combined strength of their faculties.

I wish to say at the onset that the proposals for research, education and implementation of improved on-farm practices encompassed in the pre-harvest food safety principles are consistent with Track II proposed by FSIS.

Members of FAPMC have been developing the concepts of pre-harvest food safety since 1985. These concepts are presented in the attached document, "PROVIDING SAFE FOOD FOR THE CONSUMER; A Blueprint for Implementing Preharvest Food Safety Internationally."

Recognizing that most contamination of food animals by potentially harmful chemicals or microbiological agents originates on farms, we have designed model management programs to limit contamination of animals or food products prior to their leaving the farm gate of privately owned "core farms" in each of the 6 states. Working with practicing veterinarians and producers, specialists from our faculties use computer-based, comprehensive management programs that systematically examine control strategies for contaminants at Critical Control Points (CCP) on the farm and during transport of food-products to processing plants. Our initial on-farm tests include beef, veal, pork, dairy, sheep and poultry production units in the 6 states, and each has achieved improvement in production practices leading to better quality assurance for products leaving these core test farms and at substantial savings and greater profits for producers.

<sup>1</sup>THE FOOD ANIMAL PRODUCTION MEDICINE CONSORTIUM (FAPMC) University of California-Davis, University of Florida, University of Illinois-Urbana-Champaign, Kansas State University, Michigan State University, and University of Nebraska-Lincoln.

We are convinced that vast improvements can be made very soon in food safety by implementing our current analysis and management programs. To expand the use of this new management technology will require a substantial effort to educate veterinary specialists at other institutions, practicing veterinarians, producers and others involved in food production during the pre-harvest phase. While our innovations have focused on food animal production units, we believe similar strategies can also be used for vegetable and food-grain production units.

There is a need for much more pre-harvest food safety research, education and technical transfer. This is an area that has not been adequately funded considering its potential payoff for the food industry and the consumer. I will mention only a few examples of projects that in our view should have high priority for funding:

1. **Ecology of human pathogens on food-producing farms:** A comprehensive study of the ecology and control of Escherichia coli 0157:H7 in food animals on the farms. This study of E. coli should serve as a template for control of other human pathogens such as Salmonella, Campylobacter, Listeria monocytogenes, or Cryptosporidium sp, to name a few. Well designed epidemiological studies which have the capacity to simultaneously evaluate impact of multiple variables will be required to fully understand the ecology of these organisms on farms.
2. **Rapid On-Farm Detection Technologies:** Investigation of rapid testing techniques for on-farm detection of E. coli 0157:H7 and other organisms. For example, there are DNA-probes that will detect specific strains of E. coli, and probes exist for other pathogenic microorganisms which may be of use to screen for these organisms in the proposed on-farm epidemiology studies.
3. **Hazard Analysis Critical Control Points on Farms:** A study to identify those environmental and/or the management factors that favor or lead to the occurrence and persistence of E. coli 0157:H7 (or other pathogenic organisms) in food animals. These studies could use the Hazard Analysis Critical Control Point (HACCP) approach on the test farms. We envision this study will involve the professional staff of several agencies within USDA (FSIS, APHIS [NAHMS], CES, and ARS), EPA and FDA, and representatives from the private sectors of agriculture.
4. **Nation-wide Shared Data:** The development of a nation-wide shared computer-based, data-management system for collection and analysis of on-farm information that impacts on food safety and environmental practices. This data-base will provide investigators and others access to advance technology and information more rapidly, and reduce unneeded redundancy in pre-harvest food safety investigations.
5. **Outcome Assessment:** We believe these studies (and others) should include evaluation of their impact on improving food safety, sustaining agricultural resources, improving consumer safety and satisfaction, and improving long-term profitability in the agricultural sector.

These research efforts should be coordinated with efforts to introduce and implement on-farm, management practices that will reduce or eliminate E. coli 0157:H7 and other pathogenic organisms from food animals prior to leaving the farm gate. This can be done with a coordinated program operated by Land-Grant Universities in cooperation with USDA Agencies, producers, commodity groups, veterinary college faculties, practicing veterinarians, Cooperative Extension Service and others. The goal should be to form an

information network to provide new information on food safety issues which will lead to improved practices of producers, public health officers, consumers and others involved in the production and processing (preparing) of food. We envision the use of core-farms as demonstration units for this education and implementation effort.

Mr. Chairman, the National Research Council (1985) concluded "that the most effective way to prevent or minimize hazards presented by certain infectious agents and chemical residues in meat and poultry is to control these agents at their point of entry into the food chain, i.e., during the production phase on the farm and in feedlots."

Historically, public health officers have repeatedly demonstrated that preventative medicine is the most effective and economical approach to managing or eliminating diseases. We believe these principles apply to addressing the problem of food-borne illnesses. We urge there be \$4 million appropriated in the FY-94 budget to address the research and education initiatives in the area of pre-harvest food safety. This approach will provide benefits for the producer, processor and consumer, and potentially reduce the high cost of food-safety monitoring at the post-harvest (processing) steps in the food chain.

Thank you, Mr. Chairman

[CLERK'S NOTE.--The document entitled ``Providing Safe Food for the Consumer'' does not appear in the hearing record but is available for review in the subcommittee files.]

## GULF COAST RESEARCH LABORATORY

## STATEMENT OF DR. THOMAS D. McILWAIN, DIRECTOR

THIS TESTIMONY IS OFFERED IN SUPPORT OF CONTINUED FUNDING FOR THE GULF COAST RESEARCH LABORATORY CONSORTIUM'S U.S. MARINE SHRIMP FARMING PROGRAM. IT IS SUBMITTED ON BEHALF OF THE MEMBERS OF THE CONSORTIUM: THE GULF COAST RESEARCH LABORATORY, MISSISSIPPI; THE OCEANIC INSTITUTE, HAWAII; TUFTS UNIVERSITY, MASSACHUSETTS; TEXAS A&M UNIVERSITY SYSTEM, TEXAS; THE WADDELL MARICULTURE RESEARCH AND DEVELOPMENT CENTER, SOUTH CAROLINA; AND THE UNIVERSITY OF ARIZONA, ARIZONA.

## BACKGROUND

IN 1985 THE OCEANIC INSTITUTE, TUFTS UNIVERSITY, AND THE GULF COAST RESEARCH LABORATORY SUGGESTED A UNIQUE APPROACH FOR THE U.S. INDUSTRY AND ECONOMY TO BENEFIT FROM OUR CONSUMERS DEMAND FOR SHRIMP PRODUCTS. FOREIGN SHRIMP PRODUCING COUNTRIES WERE THE PRINCIPAL BENEFICIARIES, RESULTING IN A TRADE DEFICIT OF \$2 BILLION.

THE APPROACH WAS DECEPTIVELY SIMPLE AND STRAIGHTFORWARD: IDENTIFY TECHNOLOGIES AND PRODUCTS THAT WOULD PROVIDE THE U.S. WITH A COMPETITIVE ADVANTAGE, ENLIST THE PARTICIPATION OF TOP RESEARCH AND INSTITUTIONS, DIRECT A NARROWLY FOCUSED AND RESULTS-ORIENTED PROGRAM DEDICATED TO INDUSTRY PROFITABILITY AND EXPANSION AND PROVIDE SUFFICIENT FUNDS FOR THE HIGHEST QUALITY RESEARCH, DEVELOPMENT, AND TECHNOLOGY TRANSFER TO PROVIDE OPPORTUNITIES FOR COMPETITIVE ADVANTAGE. IN FULFILLING OUR PLEDGE TO ENLIST THE BEST, PROGRAM MEMBERSHIP WAS OFFERED AND ACCEPTED BY THE TEXAS A&M UNIVERSITY SYSTEM, THE WADDELL MARICULTURE RESEARCH AND DEVELOPMENT CENTER IN SOUTH CAROLINA, AND THE UNIVERSITY OF ARIZONA. WE ALSO WORK IN CLOSE COOPERATION WITH 26 U.S. COMPANIES. THE APPROACH MAXIMIZES ACCOMPLISHMENT, TECHNICAL, AND FINANCIAL ACCOUNTABILITY AND MINIMIZES BUREAUCRATIC CONSTRAINTS.

## 1992: A BANNER YEAR

THE U.S. DOMESTIC MARINE SHRIMP FARMING INDUSTRY ENJOYED A BANNER YEAR IN 1992: BOTH PRODUCTION AND PROFIT LEVELS ESTABLISHED RECORD HIGHS. ALL SHRIMP FARMING REGIONS OF THE COUNTRY PROSPERED WITH INCREASES IN PRODUCTION OVER 1991 OF 110 PERCENT IN TEXAS, 52 PERCENT IN HAWAII, AND 48 PERCENT IN SOUTH CAROLINA. THE TOTAL PRODUCTION OF FARMED SHRIMP IN THE U.S. INCREASED FROM 2.6 MILLION POUNDS IN 1991 TO 4.8 MILLION POUNDS IN 1992, AN INCREASE OF OVER 83 PERCENT NATIONWIDE. THE ANNUAL INCREASE IN REVENUE EXCEEDED \$7 MILLION.

THE INCREASES IN PRODUCTION AND PROFITABILITY RESULTED DIRECTLY FROM PRODUCTS AND TECHNOLOGIES DEVELOPED AND TRANSFERRED TO FARMERS BY MEMBER INSTITUTIONS OF THE GULF COAST RESEARCH LABORATORY CONSORTIUM THROUGH ITS U.S. MARINE SHRIMP FARMING PROGRAM. PRINCIPAL FUNDING FOR THE CONSORTIUM HAS BEEN PROVIDED THROUGH YEARLY CONGRESSIONAL INITIATIVES, INCLUDING \$3.5 MILLION FOR FY 1993. NOT ONLY HAVE EXISTING MARINE SHRIMP FARMING COMPANIES PROSPERED AND EXPANDED, BUT AT LEAST TWO NEW DOMESTIC COMPANIES HAVE FORMED TO COMMERCIALIZE AND EXPLOIT HIGH-HEALTH SHRIMP STOCKS FOR DOMESTIC AND FOREIGN MARKETS. IN ADDITION, ONE EXISTING HIGH TECH COMPANY HAS UNDERTAKEN THE COMMERCIALIZATION OF AN ADVANCED DISEASE SCREENING PROCESS.

HIGH TECHNOLOGY ADVANCES, RESULTING FROM NARROWLY FOCUSED, DIRECTED, AND RESULTS-ORIENTED APPLIED RESEARCH AND DEVELOPMENT PROJECTS, ARE TARGETED TO FURTHER ENHANCE THE U.S. ECONOMY THROUGH INCREASED COMPETITIVE ADVANTAGE IN THE MARKET PLACE. IN PARTICULAR, THE CONSORTIUM



DEVELOPMENT OF HIGH HEALTH/GENETICALLY IMPROVED SHRIMP STOCKS AND DISEASE CONTROL METHODS, PRODUCTS AND SERVICES IS CREDITED WITH THE RAPID EXPANSION OF DOMESTIC MARINE SHRIMP FARMING. MORE IMPORTANTLY, THESE HIGH TECHNOLOGY ADVANCES, IF CONTINUED AND FULLY DEVELOPED, COULD PLACE THE U.S. IN A GLOBAL LEADERSHIP ROLE.

WORLDWIDE, MARINE SHRIMP FARMING IS A \$4 BILLION DOLLAR INDUSTRY. THE PROFITABILITY AND SUSTAINABILITY OF THIS WORLDWIDE INDUSTRY IS INCREASINGLY CHALLENGED BY DEVASTATING DISEASE PROBLEMS AND ACUTE SHORTAGES OF QUALITY SEED. BASED UPON COMPARISONS WITH OTHER ANIMAL PRODUCTION MODELS (CHICKENS, PIGS, SALMON, ETC.), SHRIMP FARMING WORLDWIDE WILL INEVITABLY BECOME DEPENDENT UPON HIGH-HEALTH AND GENETICALLY-IMPROVED SHRIMP STOCKS, AS WELL AS SOPHISTICATED DISEASE CONTROL METHODS, PRODUCTS AND SERVICES CURRENTLY UNDER DEVELOPMENT BY THE CONSORTIUM.

THE TECHNOLOGY NEEDED TO PRODUCE GENETICALLY IMPROVED SPECIFIC PATHOGEN FREE (SPF) SHRIMP STOCKS IS HIGHLY SOPHISTICATED AND NOT EASILY TRANSFERRED, COPIED, OR ADOPTED. THE TECHNOLOGY WILL REQUIRE CONTINUOUS IMPROVEMENT AND REFINEMENT. SHRIMP PRODUCERS UTILIZING THIS IMPROVED SEED WILL CONTINUE TO BE DEPENDENT UPON THOSE CONTROLLING THE TECHNOLOGY, CREATING A SUSTAINABLE DEMAND. THE U.S. IS POSITIONED TO ASSUME A WORLD LEADERSHIP ROLE IN SEED STOCK FOR SHRIMP FARMING, AS IT HAS FOR OTHER PLANTS AND ANIMALS.

THE U.S. MARINE SHRIMP FARMING PROGRAM OF THE GULF COAST RESEARCH LABORATORY CONSORTIUM IS RECEIVING UNQUALIFIED SUPPORT AND ENCOURAGEMENT BY CSRS/USDA IN THEIR ADMINISTRATION OF THE FUNDS PROVIDED BY CONGRESSIONAL APPROPRIATIONS. CSRS/USDA HAS SUGGESTED THAT THIS IS A MODEL PROGRAM FOR RESOLVING IMPORTANT PROBLEMS AND CAPTURING OPPORTUNITIES IN BOTH AGRICULTURE AND AQUACULTURE.

#### FUTURE PROJECTIONS

WITH CONTINUING ATTENTION TO HIGH TECHNOLOGY APPLIED RESEARCH AND DEVELOPMENT, THE U.S. DOMESTIC MARINE SHRIMP FARMING INDUSTRY COULD REACH \$500 MILLION IN 10 YEARS. THIS PROJECTION IS BASED UPON A 12-FOLD INCREASE IN DOMESTIC SHRIMP PRODUCTION TO 60 MILLION POUNDS, VALUED AT \$250 MILLION. THE REMAINING \$250 MILLION WILL RESULT FROM THE PRODUCTION AND EXPORT OF HIGH-HEALTH AND GENETICALLY-IMPROVED STOCKS, DISEASE CONTROL PRODUCTS AND SERVICES, MACHINERY, EQUIPMENT, AND INSTRUMENTS DESPERATELY NEEDED BY A \$4 BILLION DOLLAR WORLD SHRIMP FARMING INDUSTRY.

#### U.S. CONSUMER PREFERENCE

RECENT CONSUMER PREFERENCE SURVEYS AND IMPORT DEFICIT DATA PROVIDE UNEQUIVOCAL JUSTIFICATION FOR ENCOURAGING AND SUPPORTING EXPANSION OF THE DOMESTIC FARMING OF MARINE SHRIMP. SHRIMP DOMINATES CONSUMER PREFERENCES IN ALL REGIONS OF THE UNITED STATES. SHRIMP IS FOLLOWED BY: LOBSTER IN THE NORTHEAST, GREAT LAKES REGIONS AND MOUNTAIN REGIONS; FLOUNDER IN THE MID-ATLANTIC AND SOUTHEAST COAST; CATFISH IN THE DEEP SOUTH, MIDWEST AND TEXAS; AND SALMON IN THE WEST AND NORTHWEST REGIONS. SEVENTY PERCENT OF THE SHRIMP CONSUMED IS IMPORTED AT A \$2 BILLION DOLLAR ANNUAL DEFICIT. THE CONGRESSIONAL INITIATIVE HAS PROVIDED THE MEANS TO REACH A CRITICAL MASS OF THE MOST QUALIFIED SCIENTIFIC INVESTIGATORS AND THEIR INSTITUTIONS. THE CONSORTIUM HAS MADE SUBSTANTIAL PROGRESS TOWARD STABLE AND PROFITABLE MARINE SHRIMP FARMING IN THE UNITED STATES.

#### RIGOROUS PROGRAM REVIEW

RECENTLY, CSRS/USDA FORMED AN INDEPENDENT PANEL TO RIGOROUSLY REVIEW THE U.S. MARINE SHRIMP FARMING PROGRAM. THE PANEL FOUND THE CONSORTIUM PROGRAM TO BE WELL MANAGED, PROVIDING DIRECTION, ENCOURAGEMENT, AND

RESOURCES TO PRINCIPAL INVESTIGATORS THAT, WITHOUT EXCEPTION, ARE HIGHLY COMPETENT RESPECTED SCIENTISTS. THESE SCIENTISTS, LEADERS IN THEIR FIELD IN SHRIMP RESEARCH, WERE FOUND TO BE MAKING SUBSTANTIAL PROGRESS TOWARD THE GOAL OF INDUSTRY EXPANSION.

#### A MODEL PROGRAM

IT HAS BEEN SUGGESTED THAT THIS PROGRAM IS A MODEL FOR RESOLVING IMPORTANT PROBLEMS IN AGRICULTURE AND AQUACULTURE. THE APPROACH IS STRAIGHT FORWARD: ESTABLISH THE GOAL, DEFINE THE PROBLEM, DEVELOP AN APPROACH, IDENTIFY AND ENLIST THE MOST QUALIFIED SCIENTISTS AND ENGINEERS, PROVIDE ADEQUATE RESOURCES, AND MANAGE TO ENSURE FOCUS WITH ECONOMIC AND SCIENTIFIC ACCOUNTABILITY.

#### OTHER TECHNOLOGIES UNDER DEVELOPMENT

THE CONSORTIUM IS DEVELOPING AND TRANSFERRING TO U.S. INDUSTRY HIGH INTENSITY AND HIGH GROWTH RATE CULTURE TECHNOLOGY FOR PROFITABLE SHRIMP FARMING, INCLUDING THE PREPARATION OF MANUALS, TRAINING AT DEMONSTRATION SITES, AND ON-FARM ASSISTANCE.

EXPANSION OF THIS EFFORT, WHICH IN PART IS DEPENDENT UPON THE HIGH HEALTH AND GENETICALLY IMPROVED STOCKS DESCRIBED ABOVE, WILL PROVIDE THE U.S. FARMER WITH LOW COST PRODUCTION METHODS ESSENTIAL TO SUCCESSFUL COMPETITION WITH FOREIGN SUPPLIERS.

THE CONSORTIUM IS COMPILING INFORMATION AND DEVISING APPROACHES, PROCEDURES AND MODELS FOR SHRIMP FARM FINANCIAL MANAGEMENT, AND DEVELOPING GUIDELINES AND STRATEGIES FOR SATISFYING GOVERNMENT PERMITTING REGULATIONS. THE CONSORTIUM IS ALSO DEVELOPING PRODUCT HARVESTING, PROCESSING, MARKETING, AND DISTRIBUTION SYSTEMS TO SUPPLY VARIOUS PRODUCT FORMS TO NATIONAL AND FOREIGN CUSTOMERS.

#### CLOSE COOPERATION BETWEEN MEMBER INSTITUTIONS

IT IS IMPORTANT TO NOTE THAT OUR RAPID RATE OF PROGRESS IS DUE TO THE QUALITY OF THE PRINCIPAL INVESTIGATORS, THE LEVEL OF FUNDING AND MAINTENANCE OF A VERY NARROW FOCUS. IT IS INCREASINGLY OBVIOUS THAT A MAJOR CONTRIBUTOR TO PROGRESS IS CLOSE COOPERATION AND INTEGRATED EFFORTS BY INVESTIGATORS AND TECHNICIANS FROM SEVERAL INSTITUTIONS ON SPECIFIC PROBLEMS. FOR EXAMPLE:

1. THE ESTABLISHMENT OF NUCLEAR BREEDING FACILITIES IN HAWAII IS THE PRINCIPAL RESPONSIBILITY OF HAWAII; BUT, KEY CONTRIBUTIONS ARE BEING MADE BY ARIZONA, MISSISSIPPI, AND OTHER GOVERNMENT AND COMMERCIAL INTERESTS.
2. ESTABLISHMENT OF MATURATION/REPRODUCTION SYSTEM TECHNOLOGY, EFFECTIVE IN EVERY REGION OF THE UNITED STATES, RESULTED FROM THE COMBINED EFFORTS OF HAWAII, SOUTH CAROLINA, MISSISSIPPI, AND TEXAS.
3. THE ACQUISITION, QUARANTINE, AND SCREENING OF WILD STOCKS, AN ESSENTIAL STEP TOWARD DOMESTICATION, IS A COMBINED EFFORT OF ARIZONA, HAWAII, MISSISSIPPI, AND TEXAS.
4. THE DEVELOPMENT OF ADVANCED SEROLOGICAL AND MOLECULAR DIAGNOSTIC PRODUCTS AND PROCEDURES, INCLUDING MONOCLONAL ANTIBODIES AND GENE PROBES, IS THE PRIMARY RESPONSIBILITY OF ARIZONA. FIELD EVALUATIONS CURRENTLY INVOLVE HAWAII, MISSISSIPPI, AND FLORIDA.
5. MASSACHUSETTS IS LEADING EFFORTS TO QUANTIFY GENETIC DIVERSITY AND IDENTIFY GENETIC MARKERS THAT WILL ACCELERATE THE DOMESTICATION PROCESS. THESE EFFORTS INTERACT WITH HAWAII, MISSISSIPPI, AND ARIZONA.

### INDUSTRY DEVELOPMENT FOCUS

TO ENSURE OUR FOCUS REMAINS ON INDUSTRY EXPANSION, THE CONSORTIUM WORKS INTERACTIVELY WITH EXISTING MARINE SHRIMP FARMS, AS WELL AS AQUACULTURE SUPPORT COMPANIES IN THE UNITED STATES, INCLUDING SEVEN COMPANIES IN HAWAII, SEVEN COMPANIES IN TEXAS, NINE COMPANIES IN SOUTH CAROLINA, ONE IN FLORIDA, ONE IN IDAHO, AND ONE IN PENNSYLVANIA.

### FY 1994

RAPID TECHNOLOGICAL PROGRESS IS OUTSTRIPPING OUR EXISTING INFRASTRUCTURE. RESOURCES ARE BEING SOUGHT TO ESTABLISH NUCLEAR BREEDING CENTERS IN HAWAII, BROODSTOCK PRODUCTION AND TESTING AND SEED PRODUCTION CENTERS IN TEXAS, HAWAII, AND SOUTH CAROLINA, AND DISEASE AND QUARANTINE CENTERS IN MISSISSIPPI AND ARIZONA.

THE CONSORTIUM IS POISED TO CAPITALIZE ON ITS ADVANCED PRODUCTS AND TECHNOLOGIES. THE UNITED STATES CAN REDUCE ITS TRADE DEFICIT AND STILL PROVIDE CONSUMERS WITH THEIR PREFERRED SEAFOOD - MARINE SHRIMP. REALIZATION OF THESE GOALS FOR FY 1994 WILL REQUIRE EXPANSION OF OPERATIONAL SUPPORT TO \$5 MILLION AND A ONE-TIME CAPITAL GRANT OF \$4 MILLION.

### APPRECIATION

WE THANK THE COMMITTEE AGAIN FOR ITS CONTINUING SUPPORT, BEGINNING IN 1985, TOWARD THE DEVELOPMENT OF THIS HIGH TECHNOLOGY RESEARCH AND DEVELOPMENT PROGRAM, WHICH IS BEGINNING TO DELIVER ITS INTENDED RETURN: AN INTERNATIONALLY COMPETITIVE, PROFITABLE, EXPANDING, AND DIVERSIFIED U.S. MARINE SHRIMP FARMING INDUSTRY.

## HARZA NORTHWEST, INC.

## STATEMENT OF BRIAN ALLEE, SENIOR FISHERIES SCIENTIST

Mr. Chairman and Members of the Subcommittee: My name is Brian Allee. I am the Senior Fisheries Scientist for Harza Northwest, Inc., an engineering and environmental consulting firm in Bellevue, Washington. I will be the President of the Fish Culture Section of the American Fisheries Society in September of 1993 and I am past President of the Pacific Coast Oyster Growers Association. I am now, and have been since its inception, a member of the Industry Advisory Council for the Western Regional Aquaculture Center.

I have been active professionally in the field of fisheries for over 23 years and have worked in the private sector in Aquaculture for the majority of that time in Alaska, Washington and Oregon. During much of my career I have worked with University, Government and Industry in a cooperative research mode to attempt to solve pressing Industry problems in order to achieve successful business commercialization. It is my opinion that the program of research sponsored by the Western Regional Aquaculture Center in my geographical area has made a significant contribution to the developing industry here.

Harvesting food from the ocean and our abundant inland bodies of water in the United States has been a continuing struggle given the major efforts by foreign nations in the world marketplace. We in industry need your support to strengthen the critical research necessary to make the United States Aquaculture Industry competitive and to build our world market share. The Aquaculture Industry provides jobs, makes a significant economic impact in the region and local communities, and is compatible with the environment.

Clearly, given our national fiscal environment your careful scrutiny is required for all budgetary requests; however, funding for the five Regional Aquaculture Centers at the fully authorized level of \$7.5 million is an investment which will ultimately generate real economic value in terms of the "fish dollars" which circulate through the local economy. I can think of no better way for Government to help industry than through the financial support of research which focuses on industry generated problems in an effort to make us more competitive as a nation.

Thank you for the opportunity to provide this testimony and I urge your support of this critical appropriation.

## STATEMENT OF THE HEALTH INDUSTRY MANUFACTURERS ASSOCIATION

The Health Industry Manufacturers Association appreciates the opportunity to submit testimony in support of Fiscal Year 1994 appropriations for the Food and Drug Administration.

HIMA is a national health care trade association representing nearly 320 medical device, diagnostic product, and health care information system manufacturers, whose goal is to bring high quality, life-saving products to millions of patients around the world. The \$39 billion medical technology industry has been recognized by the Commerce Department as the most consistent performer in the past five years. HIMA member sales represent over 90 percent of this \$39 billion industry. More recently, Commerce announced that the three fastest growing sectors of the U.S. economy for the period 1988 - 1993 were all in the medical technology industry.

These Commerce findings are not insignificant -- they recognize the jobs and positive trade balance this industry has provided. An average of 12,000 jobs per year have been created by an industry dominated by entrepreneurial small businesses -- businesses that currently employ some 270,000 people. The industry has also contributed to the U.S. trade surplus at an average annual rate of 20 percent over the last five years, contributing over \$4 billion each in the last two years alone. Significantly, over one-third of the industry's growth has been used to keep up with the strong overseas demand for U.S. medical device exports. It has been said that small businesses are the engine of the U.S. economy, and we believe the medical technology industry is living proof of this.

Unfortunately, while our industry is strong now and has been able to maintain its innovative, creative, and competitive edge, the future is not assured. Our strongest competitors are Germany, with whom we maintain a negative balance of trade, and Japan. Recently, the Japanese government called for more government support of R&D in certain medical technology sectors -- in short, targeting these sectors as "industries of the future." We are concerned about this turn of events given past successful Japanese targeting of the U.S. steel and semiconductor industries.

Thus, like some of the medically fragile patients who rely on our devices, our industry too is fragile. A critical factor in the strength or weakness of the medical technology industry is the Food and Drug Administration, our lifeline to domestic and world markets. Ultimately, the deficiencies of the Agency, in particular the past and present resource inadequacies of the Center for Device and Radiological Health (CDRH), hurt U.S. patients and the innovation and competitiveness of the industry.

There are three important points I would like to leave with you today: first, the overall product review climate has continued to deteriorate; second, there are four new structural forces that will dramatically increase the level of resources the Agency needs; and third, I would like to leave you with our recommendations about FDA's resource needs.

### **Product Review Environment**

With respect to the product approval process, over the past several years, the number of product applications submitted to CDRH has increased, while the number of products actually moving through the pipeline has decreased, leading to an ever-growing backlog and virtual gridlock. Without question, the precipitous drop in medical technology product approvals is undermining the strength of our industry, and jeopardizing patient access to life-enhancing, life-saving technologies.

The number of pre-market approvals (PMAs) for breakthrough devices has fallen from an average of almost 50 per year during the late 1980's to 27 in 1991, to only 12 in 1992 -- a drop of 56 percent just in the last year. It should be noted that six of the twelve PMAs approved were for licensing agreements which do not require review of clinical data. Additionally, the



time it takes to complete such product reviews has continued to soar, increasing more than 50 percent between 1990 and 1991.

The trends are equally disturbing when it comes to 510(k)s, those products that represent incremental innovations. FDA has reported that 510(k)s now take an average of 126 days, an increase of 24 percent and well above the 102 days it took in 1991. Some 510(k)s are taking as long as 200 days and beyond. Additionally, a 510(k) backlog is growing: between 1991 and 1992, 510(k) submissions increased almost 13 percent, but the total number of decisions dropped 9 percent, and the total number of substantial equivalence decisions -- the decisions required for market access -- dropped 12 percent.

### Structural Changes in FDA Responsibilities

What I have described is the current environment for FDA device reviews. Without changes, we expect that that environment would continue to deteriorate -- but the deterioration will be even more serious now because of four new structural challenges that will dramatically draw on FDA's resources.

The first such structural challenge is the implementation of the Clinical Laboratory Improvement Act. FDA was essential in breaking an early logjam in the implementation of CLIA. The initial regulations proposed by the Health Care Financing Administration would have required HCFA approval for in vitro diagnostic products, in addition to the normal FDA pre-market approval for IVDs. It was widely believed this dual regulatory process would severely impede innovations in laboratory diagnostics. After negotiations with HCFA and the Centers for Disease Control, FDA agreed to lend its considerable expertise and assume the burden of CLIA's technology-related components, thus maintaining an innovative IVD environment.

Today, however, FDA is not fulfilling the responsibilities it agreed to assume, specifically assigning "complexity categorizations" for new IVD products on September 1, 1992. This is having a devastating effect on the ability of our members to provide new IVD products to customers since products without a complexity rating are by default placed in the highest complexity category. It is our belief that FDA is still committed to timely CLIA implementation but simply does not have the requisite resources -- estimated at \$30 million or 170 FTEs -- to fulfill this commitment.

A second structural challenge which is proving burdensome to FDA's limited resources is the implementation of the Mammography Quality Standards Act of 1992. Under this new law, FDA must issue regulations establishing quality assurance programs, including the reliability of the equipment and the clarity and interpretation of its image. FDA must also establish on-going personnel training and education standards. Additionally, FDA must certify all mammography facilities by October 1994, and all facilities must have an annual on-site inspection -- no small task in and of itself. It has been estimated that this legislation will cost \$13 million or 50 FTEs to implement.

A third challenge for the FDA is the implementation of the Safe Medical Devices Act of 1990. Under the legislation, FDA is required to issue 17 sets of new regulations. Full implementation of the congressionally mandated legislation is estimated to cost nearly \$26 million or 300 FTEs. Again, with its limited resources, FDA is finding it difficult to meet its responsibilities. For example, FDA has already failed to meet its November 28, 1992 statutory deadline for publishing final device tracking regulations.

### Availability of Biomaterials

A final structural force concerns raw materials used in device production. Concern over product liability is leading suppliers of some raw materials to stop selling those materials for use in implantable medical devices and their components, leading to a potentially devastating shortage of raw materials for implantable medical devices. Dupont, for example, has publicly stated its decision to withdraw from the market. Other raw materials manufacturers have indicated they are considering following suit for the same reasons.

This is a serious situation -- the availability of biomaterials has grave and life-threatening consequences for both patients and our industry -- and I want to take a moment to explain exactly what it means. The raw materials, or polymers involved, affect almost all implants, including pacemakers, hip and knee joints, hydrocephalus shunts, sutures, tracheostomy tubes, and many other products. .

Because we do not yet know the availability of substitute raw materials, we do not yet know the magnitude of the problem. We do, however, know the following: in order to demonstrate safety and efficacy as required by the product review process, those manufacturers who are able to obtain substitute raw materials may have to submit new 510(k)s or PMA supplement applications to a system that is already backlogged. It is not entirely clear that the system will be able handle this additional strain.

HIMA has already heard from concerned patients and patient groups -- the father of a child suffering from hydrocephalus frantically called asking if he should purchase hydrocephalus shunts now for his young child. Clearly, the health and well-being of American patients is at stake; and there will be many more such calls from patients all around the country unless this issue is effectively addressed.

HIMA has begun an effort with the FDA in an attempt to solve the problem. While we don't yet know the specifics of the solution, two things are clear: substitute materials must be safe, and there must be an expedited FDA review process to prevent an imminent shortage of implantable devices.

To sum up, there is a large and growing backlog of device approvals at the CDRH to which must be added the implementation of the Clinical Laboratory Improvement Act, the Safe Medical Devices Act, the Mammography Quality Standards Act, and a potentially devastating biomaterials shortage.

### **Recommendation**

I cannot emphasize enough our industry's support for a strong yet consistent and predictable product review process. We believe such a review process is in the best interests of both patients and industry. The Honorable John Dingell, Chairman of the Subcommittee on Oversight and Investigations, has exercised considerable oversight in this area and the Center for Device and Radiological Health is also looking at ways to improve the process. Finally, because of the serious implications the slowdown in product approvals has for our industry and patient health, HIMA has tried to play a constructive role and worked hard to come up with suggested recommendations to FDA on ways a clear, consistent, and predictable product review process might be established.

Unfortunately, based on our understanding of the fiscal year 1994 Administration Budget, we think more resources are needed to improve the product review process. The President's budget would increase FDA funding by \$98 million over the revised FY 93 level while little, if any, of this increase would appear to be targeted to the product review process in the CDRH. HIMA is not opposed to providing funding for the new authorities Congress has chosen to give FDA -- we want the Agency to have the resources to properly administer the Mammography Quality Standards Act, the Safe Medical Devices Act, and the Clinical Laboratory Improvement Act.

However, we are deeply troubled that the Agency did not request of you the funds it needs to eliminate the gridlock in the product review process. We sincerely hope that the Subcommittee recognizes the underfunding that exists with respect to the product review process, and we go on record in requesting that a portion of the agency's funding increase be reallocated to this vital activity.

In closing, many will -- and have argued -- that the above-mentioned problems at FDA are an argument for user fees for the medical technology industry.

As you may recall, HIMA opposed the inclusion of the medical technology industry in the user fee legislation proposed last year. User fee legislation for biological and prescription drug manufacturers was subsequently passed and enacted into law. This year, the Clinton Administration has proposed user fees for both the medical technology, food, and over-the-counter pharmaceutical industries to be applied to agency enhancement and deficit reduction activities.

Unfortunately, the perception exists that there is an unwillingness on the part of the Agency -- not just recently, but over a number of years -- to make the reforms necessary to establish a clear, consistent and predictable product review process within the Center for Device and Radiological Health. This perception has been borne out as industry has witnessed the systemic deterioration of the product review process, the virtual gridlock that we see today, and the apparent unwillingness of the Agency to devote any of the funding increase it requested in the FY 1994 Budget to the product review process.

The medical technology industry has no reason to believe that a review process that is now deteriorating will be responsive should they invest their limited cash flow and capital in the system. The industry simply has not seen satisfactory efforts within the FDA to command the resources or make the necessary reforms to improve an intolerable situation.

To sum up, we believe that enhanced appropriations are needed to address the existing product review process and the new structural demands identified above. Without adequate appropriations to fund these major new activities, CDRH programs -- product review and otherwise -- could deteriorate to a point that is beyond recovery. But to fix the underlying product review problem -- to make the core process clear, predictable, and effective -- requires a commitment, a will, that money cannot buy. FDA must take the hard, internal steps necessary to return its review process to sound footing. We should not reward gridlock with user fees.

## HUMANE SOCIETY OF THE UNITED STATES

STATEMENT OF MARTHA COLE GLENN, DIRECTOR, FEDERAL  
LEGISLATIVE AFFAIRS

Mr. Chairman, members of the subcommittee, I am Martha Cole Glenn, Director of Federal Legislative Affairs for The Humane Society of the United States (HSUS). The HSUS is the nation's largest animal protection organization, with 1.6 million members and constituents. I am pleased to have the opportunity to testify today regarding FY'94 funding of programs of interest to The HSUS which are under the jurisdiction of your subcommittee.

Animal Damage Control Program (ADC)

We appreciate the subcommittee's past support of research and use of non-lethal animal damage control techniques. This research and the incorporation of proven non-lethal techniques into the operational activities of the Animal Damage Control (ADC) Program is helping to provide ADC agents and property owners, particularly livestock producers, with alternatives to exclusively lethal means of predation control.

However, we are concerned by the continued overwhelming reliance in the ADC Program on lethal methods of control, such as the killing of Western predators (primarily coyotes) by aerial hunting, trapping, denning and poisoning. Despite declarations at the Washington level that the ADC Program utilizes lethal control methods only as a last resort and target whenever possible the individual animal causing damage, the number of coyotes killed each year continues to increase. This approach is expensive, ineffective and likely to be counterproductive.

The HSUS recommends that the subcommittee instruct USDA to devote a substantial percentage of FY'94 Western region operational funds for the ADC Program to use of non-lethal wildlife damage control techniques such as livestock guarding dogs and siren/strobe devices and practices such as carcass removal, night penning and shed lambing. We recommend that the subcommittee direct APHIS to allocate a minimum of forty percent of Western region operational funding to the implementation and use of non-lethal predation reduction techniques.

ADC researchers have worked on a number of techniques which promise to reduce wildlife-caused losses without killing wildlife, but are threatened annually by budgetary constraints. Therefore, we ask that the subcommittee direct that a minimum of 70 percent of funds allocated to ADC research be devoted to the identification and development of non-lethal, non-injurious, damage control techniques. In particular, The HSUS requests that \$100,000 in FY'94 non-lethal research funds go to Arizona State University's Center for Environmental Studies for continued support of vital research on the use of conditioned taste aversion as a means of reducing coyote predation on livestock.

Animal Welfare Act (AWA)

The HSUS endorses the testimony of the Society for Animal Protective Legislation (SAPL) which requests the following: a FY'94 appropriation of \$23 million for the enforcement of the Animal Welfare Act (AWA), the chief law for protection of animals in the United States; \$750,000 for enforcement of the Animal Welfare Information Center and \$500,000 for enforcement of the Horse Protection Act. We join with SAPL in pointing out that insufficient funding combined with a regulatory approach which has downplayed serious, thorough inspections and enforcement of violations of the law in favor of vague "educational" goals have had an extremely serious, adverse effect on enforcement of the nation's primary animal protection law. These funds are needed to ensure that there are enough inspectors and adequate inspections of facilities covered by the Animal Welfare Act.



As reported in our FY'93 testimony before this subcommittee, since 1986, the number of inspections has decreased from an average of 2.15 per site to a low of 1.22 in 1989. This trend has been of great concern to The HSUS. In 1990 APHIS reported an average of 1.40 inspections per site, and while this increase is encouraging, The HSUS believes that 1.40 inspections per site is still woefully inadequate. With 1,474 research facilities (3,495 separate sites), 4,400 animal dealers, 1,495 exhibitors and 442 animal carriers and handlers, the APHIS field staff has only 49 veterinary medical officers and 37 animal care inspectors, for a total of 86 -- obviously far too few to adequately enforce the law.

This failure to enforce the law was graphically confirmed in the summer of 1992, when a Freedom of Information Act (FOIA) request submitted by The HSUS uncovered a March, 1992, USDA Inspector General's Audit Report (No. 33002-001-Ch) which concluded "that APHIS cannot ensure the humane care and treatment of animals at all dealer facilities as required by the act. APHIS did not inspect dealer facilities with reliable frequency, and it did not enforce timely correction of violations found during inspections." This failure of the USDA to conduct an adequate number of inspections, is nowhere more evident than at commercial dog breeding facilities, the worst of which are commonly known as "puppy mills." Despite national attention brought by The HSUS and the national media through such programs as ABC's "20/20", the USDA continues to be outrageously lax in enforcement of the AWA at these facilities, which on the average are inspected little more than one time a year. In fact, at one point, a USDA inspector was operating her own puppy mill.

As shown during the July 8, 1992, hearing on the treatment of exhibition animals before the House Agriculture Department Operations Subcommittee (Rose, D-NC), the inadequate regulations, standards, and enforcement of the AWA have also failed to ensure the well being of animals exhibited in zoos, aquaria, circuses, and animal acts. The HSUS finds these inadequacies especially disturbing when considering the inability of APHIS to ensure AWA compliance for animals which seem to face particular hardships in captivity, such as marine mammals, primates, elephants, big cats and bears. In fact, as confirmed by the 1992 USDA Inspector General's audit report, licenses continue to be renewed despite repeated AWA violations, and violations are not routinely or stringently penalized. These failures result in animal neglect, abuse, injury, illness and premature death.

Given this continued failure of USDA to enforce the law, The HSUS recommends, as one method to correct these very serious animal welfare problems, that the joint responsibility for ensuring compliance for the care and maintenance of marine mammals in captivity currently shared by APHIS and the National Marine Fisheries Service (NMFS/Department of Commerce), be fully and solely transferred to NMFS, which has authority over the initial "take" of marine mammals and facility standards. This action would not only streamline the current cumbersome and confusing permitting and care compliance process by refining all related responsibilities under one agency -- NMFS -- but also free up funds to improve APHIS efforts on behalf of other exhibition animals.

With final reference to the need for stricter enforcement of the AWA by USDA, The HSUS applauds the February 25, 1993, ruling issued by U.S. District Court Judge Richey overthrowing recent USDA regulations on exercise for laboratory dogs and the well-being of laboratory primates and ordering the USDA to promulgate new regulations pursuant to the congressionally-mandated Improved Standards for Laboratory Animals. We hope that Congress will join with us in asking for prompt promulgation of sound regulations.

#### Packers and Stockyards Administration

The HSUS also requests that funding for the Packers and Stockyards Administration continue at the level of FY'93 funding. Although funding for The P & S Administration is a one-line budget item, we would like to emphasize the importance of The P & S Administration Livestock Marketing Division's responsibility for monitoring the care and handling of animals at stockyards.

One example of the importance of its role in monitoring the handling of animals is demonstrated by the problem of the abusive treatment of many



downed animals at livestock markets, a problem that has received a great deal of public attention and concern. The P & S Administration has been investigating the handling of these and other animals at livestock markets and is expected to complete their investigation at the end of this year. We expect this study will confirm what The HSUS, The American Veterinary Medical Association, The National Pork Producers Council, numerous state Cattlemen's Associations, and many others have stated -- downed animals should never be sent through intermediate markets.

#### The National Organic Standards Board (NOSB)

In response to the increased demand for organic food, confusion over exactly what "organic" means and variance in standards from state to state, The U.S. Organic Foods Production Act of 1990 established the first national standards for organic food production. These standards will help develop the market and assure consumers of consistent standards for organic foods. The National Organic Standards Board (NOSB) is the public advisory Board which is mandated by the Act to develop guidelines for organic production.

The HSUS requests that Congress approve a FY'94 appropriation of \$780,000, for implementation of the Organic Foods Production Act and \$150,000 for the operation of the National Organic Standards Board (NOSB). The \$780,000 figure is one which has been calculated by the USDA Agricultural Marketing Service (AMS) as the amount necessary for it to fulfill its obligations under the Act.

Unfortunately, in FY '93 the \$780,000 figure approved by the Senate was knocked out in Conference. This lack of sufficient funding has now delayed implementation of the program for at least one year beyond the legislative deadline and threatens the survival of this program. We emphasize that these funding figures will not be requested for administration of the program on an annual basis once it is up and running, as the program is designed to be funded by user fees.

The National Organic Standards Board is unique in that it performs a broad range of statutory tasks in addition to the standard duties of other agricultural advisory committees. That the NOSB has many more responsibilities and requires a more extensive time commitment than other agricultural advisory committees (including the following key committees: livestock, crops standards, accreditation, materials, processing, international) underscores the critical need for the full funding of \$150,000, a level similar to the FY '92 level of \$120,000 rather than the inadequate funding level of \$15,000 in FY '93.

#### Sustainable Agriculture Research and Extension (SARE)

The HSUS urges that the \$40 million authorized by Congress for The Sustainable Agriculture Research and Education program (SARE) be fully funded. SARE is the only federal research and education program that focuses solely on sustainable agriculture systems and practices. It is also unique in its blend of extensive farmer participation, integration of research and extension, preference for whole farm systems research projects, and partner-ship philosophy joining public agencies and private research and education organizations.

Congress has authorized \$40 million for this program, but it is currently funded at a level of only \$6.7 million, 0.4% of the USDA budget for research and education. We call on your support for full funding of the SARE program, which would increase sustainable agriculture research to 2.3% of the USDA research and education budget.

#### Sustainable Agriculture Technology Development and Transfer Program

The Sustainable Agriculture Technology Development and Transfer Program (SATDTP) was created by Congress in the 1990 Farm Bill. This program consists of two parts: a nationwide sustainable agriculture training program for extension agents and other agricultural professionals, and a nationally-coordinated, state and regionally-based extension outreach effort. This program would utilize the existing regional administrative apparatus of the SARE program.

The HSUS urges the Congress to fund this program in FY'94 at the amount authorized in the 1990 Farm Bill -- \$20 million. Farmers are in great need of new and reliable information on sustainable practices. At the same time, research efforts in sustainable agricultural would be enhanced with a better flow of information from the farmer (who is utilizing the research) back to those developing the technology. Extension is the perfect vehicle for realizing these joint goals, and funding for this program is critical if we are to make the transition to a more sustainable system of farming.

This program would not only serve as the outlet for sustainable agriculture information, but could also provide the means for Extension Service input and response to programs established by the Clean Water Act and other environmental laws, and provide a vehicle for integration of the R&D results of the USDA's water quality and integrated pest management programs.

#### Animal Welfare Information Center (AWIC)

The HSUS requests the subcommittee ensure that the Animal Welfare Information Center (AWIC) at the National Agricultural Library (NAL) receive an allocation of \$750,000 for FY'94. Recently, funds have been removed from the AWIC allocation to meet other NAL needs. The Center was established as an information center to assist with laboratory animal employee training, to prevent unintended duplication of animal experiments, to help reduce or replace use of animals where possible, and to minimize animal pain and distress. It is a unique source of information for a wide range of people, including veterinarians, school children, biomedical researchers, exhibitors, educators, Capitol Hill staffers and others who need to information about compliance with the AWA.

## HUNG'S SHRIMP FARM, INC.

STATEMENT OF VERNON L. NELSON, VICE PRESIDENT AND  
GENERAL MANAGER

I WOULD RESPECTFULLY SUBMIT THIS LETTER OF TESTIMONY FOR THE SUBCOMMITTEE'S CONSIDERATION IN IT'S REVIEW OF THE FY94 ALLOCATIONS FOR THE U.S. MARINE SHRIMP FARMING PROGRAM OF THE GULF COAST RESEARCH LABORATORY (MSFP).

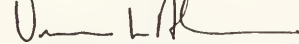
OUR COMPANY IS THE LARGEST SHRIMP FARM IN THE UNITED STATES AND THAT GROWTH HAS ONLY BEEN MADE POSSIBLE BY THE SIGNIFICANT CONTRIBUTIONS OF THE MSFP. IT IS SOLELY THROUGH THEIR RESEARCH AND SUCCESS IN DEVELOPING THE STOCK OF HIGH HEALTH SHRIMP THAT HAS ENABLED US TO DEVELOP A COMMERCIALY VIABLE OPERATION. TO DATE WE HAVE INVESTED IN EXCESS OF TWENTY TWO MILLION DOLLARS IN OUR OPERATION AND PROVIDE EMPLOYMENT FOR OVER ONE HUNDRED AND SIXTY PEOPLE IN ONE OF OUR COUNTRIES MOST ECONOMICALLY DEPRESSED AREAS (CAMERON COUNTY, TEXAS). NONE OF THIS WOULD BE POSSIBLE WITHOUT THE BREAKTHROUGHS OF THE MSFP, NOR WILL WE BE ABLE TO CONTINUE OUR SUCCESS WITHOUT THE STOCK OF HIGH HEALTH SHRIMP PROVIDED BY THE MSFP.

THE U.S. IMPORTS OVER SEVENTY PERCENT OF ALL SHRIMP IT CONSUMES AND THE TRADE DEFICIT ON SHRIMP IMPORTS IS REPORTED TO EXCEED SIX BILLION DOLLARS. IT IS OBVIOUS THAT COMMERCIAL SHRIMP FARMING IS OF GREAT BENEFIT TO BOTH OUR LOCAL AND NATIONAL ECONOMIES IN TERMS OF DOLLARS GENERATED AND JOBS. ACCORDING TO AN ECONOMIC IMPACT ANALYSIS PERFORMED BY TEXAS A & M (COPY ATTACHED) THE REGIONAL IMPACT FROM OUR OPERATION ALONE IS ALMOST SIXTEEN MILLION DOLLARS.

WE WOULD RESPECTFULLY URGE THE SUBCOMMITTEE TO GIVE DUE CONSIDERATION TO THE EXISTING AND POTENTIAL IMPACT OF THE SHRIMP FARMING INDUSTRY AND TO THE FACT THAT THIS INFANT INDUSTRY WILL NOT BE ABLE TO ADVANCE OR TO SURVIVE WITHOUT THE CONTINUING SUPPORT AND RESOURCES PROVIDED BY MSFP IN THE FORM OF HIGH HEALTH SHRIMP SEED, DISEASE PREVENTION AND CONTROL, CULTURE TECHNOLOGIES, MANAGEMENT STRATEGIES, AND MARKET DEVELOPMENT.

THANKING THE SUBCOMMITTEE FOR IT'S TIME AND CONSIDERATION, I  
REMAIN

VERY TRULY YOURS




VERNON L. NELSON  
VICE-PRESIDENT AND  
GENERAL MANAGER

TEXAS A&M UNIVERSITY  
College of Agriculture and Life Sciences  
*Department of*  
*Agricultural Economics*

MEMORANDUM

DATE : February 9, 1993

TO : Beau Nelson, President

FROM : Allen J. Wyse 

SUBJECT : Economic Impact Analysis for Cameron County

Economic impact analysis in the hands of the untrained enthusiast can be likened to handing a loaded pistol to a 3 year old...you have to be careful where you point it. With that caveat in mind I have put together some economic multipliers for Cameron County for Hung's Shrimp Farm, Inc. These are based on 1990 data. Shrimp Aquaculture is an unusual and difficult entity to grasp since it is a developing industry in the U.S.

The Bureau of Economic Analysis categorizes all fish and shrimp hatcheries under Agricultural, Forestry and Fisheries Services. I made the assumption that the value of your hatchery output was \$1 million and that the resulting sales of shrimp would be \$6.2 million. Fish aquaculture is categorized under Commercial Fishing so that is the category that was shocked for the shrimp aquaculture.

When the Cameron County model was shocked with an additional output of \$1 million from a hatchery and \$6.2 million in commercial fishing sales, for a total economic shock of \$7.2 million, the regional economic results were as follows:

<u>Category</u>	<u>Change</u>
Total Regional Industrial Output	+ \$15,795,900.00
Total Regional Employee Compensation	+ \$ 5,950,700.00
Total Regional Employment (persons)	+ 395
Total Regional Population (persons)	+ 1,062

## ILLINOIS GROUNDWATER CONSORTIUM

STATEMENT OF DR. JOHN YOPP, ASSOCIATE VICE PRESIDENT FOR  
ACADEMIC AFFAIRS AND RESEARCH, SOUTHERN ILLINOIS  
UNIVERSITY AT CARBONDALE**Mr. Chairman and Members of the Committee:**

On behalf of Southern Illinois University, I am pleased to have this opportunity to discuss with you the proposed FY 1994 funding request of the Illinois Groundwater Consortium. The Consortium respectfully requests an FY 94 appropriation of \$1 million through the U. S. Department of Agriculture to continue, for a fifth year, its critical study of the impact of agricultural chemicals on groundwater in Illinois.

The Illinois Groundwater Consortium grew out of an FY 1990 appropriation of \$500,000 provided by this Subcommittee, to Southern Illinois University at Carbondale (SIUC) to focus on this important topic. As a result of this appropriation, SIUC joined forces with the Illinois State Geological Survey, Illinois State Water Survey, University of Illinois Cooperative Extension Service, and the University of Illinois Agricultural Experiment Station, to effectively work together toward providing a scientifically valid basis upon which meaningful agricultural chemical management and regulatory decisions can be based. Information on the occurrence, transport, and fate of agriculture chemicals in representative hydrogeological settings in Illinois will best be acquired through a joint effort of experts from the above nationally-regarded research entities in the State of Illinois.

The USDA-funded program is administered by SIUC. Today, in our fourth year of operation, we are involved in the acquisition of information gained from scientific investigations conducted by Consortium scientists. This information, supported by the initial appropriation of \$500,000, the FY 1991 appropriation of \$600,000, the FY 1992 appropriation of \$750,000, and the FY 1993 appropriation of \$750,000, is being disseminated to pertinent constituencies through incorporation into course materials, extension service activities, conferences, and publications. In addition, this information is available in published form to researchers, agency personnel, and the public in other states, to help them in addressing issues pertaining to agriculturally related impacts on groundwater quality.

**Status of Current Program:**

The Advisory Committee of the Illinois Groundwater Consortium, consisting of institutional representatives from each of the Consortium members and the Consortium Director (Dr. Victoria Molfese, SIUC) are overseeing the progress of 27 research projects currently receiving support from Consortium funds. In addition, the Advisory Committee is involved in the solicitation and review of proposals for new projects supported with FY 93 funds and with the Third Research Planning Conference.

**(1) Projects Funded in the Second Appropriation Year (Program Year Two).**

Progress reports from six research projects which were approved for two year project periods were reviewed by the Advisory Committee. These projects include research on the historical use of chemicals and crop production on economically viable farms, contamination of wells, streams, and groundwater by specific agricultural chemicals, the transport of chemicals through different soil types, and public policy issues in water protection strategies. The Advisory Committee considered that the progress made in these projects to be appropriate, and a total of \$214,800 of the FY92 funds was used to fund continuation projects.



**(2) Projects funded in the Third Appropriation Year (Program Year Three).**

The major portion of FY 92 funds was used to support new projects. Eight of the 20 proposals receiving the highest peer reviewed evaluations were recommended for funding by the Illinois Groundwater Consortium Advisory Committee. These projects included research in identifying sources of nitrate in groundwater, contamination of wells by agricultural chemicals, the production of a public service publication on groundwater protection, transport of chemicals through different soil types and under differing soil conditions, effects of crops on chemical transport, public policy issues related to the Clean Water Act, and the effects of buffer strips on reduction of pollution. A total of \$464,675 of the FY 92 funds was used to fund the eight new projects.

In addition, the Advisory Committee agreed to continue to exchange data samples between three laboratories (two at SIUC and one at Illinois State Geological Survey) to explore differences obtained in studies on the presence of atrazine in water or soil recommended to receive \$5,000 each to continue the processing and analysis of the atrazine samples and comparisons of results. A total of \$15,000 of the FY92 funds was used to fund the three atrazine projects.

**(3) Fourth Appropriation Year (Program Year 4).**

The \$750,000 in funds provided to the Illinois Groundwater Consortium in the fourth year will be used to support new projects. Proposals have been solicited through a request for proposals sent to consortium institutions. Proposals are peer-reviewed by experts in the field, representing a variety of institutions, including the University of Illinois, University of Arkansas, Purdue University, Illinois Natural History Survey, and the Illinois Soil Conservation Service. The highest evaluated proposals are then reviewed by the Illinois Groundwater Consortium Advisory Committee, which subsequently selects the projects recommended for funding to the USDA. By July, the fourth year program should be funded and in operation.

**(4) Research Planning Conference.**

The Illinois Groundwater Consortium remains committed to a continuation of this annual meeting to help fulfill the technology transfer function of the program. The second Research Planning Conference was held in Springfield, Illinois, on April 26 and 27, 1992. Presentations were made by all the principal investigators of all projects supported by Consortium funds at that time. The proceedings of the conference have now been published and distributed. The third Research Planning Conference was held on March 31 and April 1, 1993. A total of \$12,500 of the FY92 funds will be used to fund the research planning conference and for publishing the proceedings after the conference.

**FY1994 Request:**

The Consortium is requesting a FY1994 funding level of \$1 million (Program Year 5). Each year over two times as many projects are submitted as proposals than are funded as grants because of limited funding. The Consortium is hopeful that a broad based research program can continue to be developed. Additional funds will enable the Consortium to more adequately focus on issues of current and historical importance to groundwater quality in Illinois. The funding will be channeled to projects falling under the following priority areas:

- (1) Assessment of agricultural practice effects on fate and transport of chemicals;
- (2) Assessment of existing groundwater quality;
- (3) Evaluation of agricultural practices contributing to groundwater contamination;
- (4) Studies of existing and past agricultural and agrichemical practices;
- (5) Regulatory and incentive effects;
- (6) Groundwater and protection strategies;
- (7) Education and extension service activities;

Ninety-five percent of the funds provided to the Consortium will continue to be used for project activities and the Research Planning Conference. The universities and scientific surveys involved in the Consortium are waiving their usual indirect cost rates on these awards in order to provide maximum support of these funds to this essential research. Prioritization of funding objects will be accomplished through recommendations by the external reviewers, discussions at the Research Planning Conferences, and decisions of the Advisory Committee. The highest research priorities will include research in areas of great need, but for which there is currently little or no state/federal funding because of budgetary constraints.

**Preliminary Budget:**

Continuation Projects	\$495,286
New Projects (11)	367,214
Special Projects	62,500
Administration Support (5%)	62,500
Research Planning Conference	12,500
	-----
<b>TOTAL</b>	<b>\$1,000,000</b>

On behalf of Southern Illinois University at Carbondale and the Illinois Groundwater Consortium, I wish to thank the Subcommittee for the opportunity to submit this testimony to you. We hope you will be able to allow us to continue our work for what may be the finest consortial research effort on groundwater in the country.

## UNIVERSITY OF ILLINOIS

STATEMENT OF DAVID L. CHICOINE, HEAD, DEPARTMENT OF  
AGRICULTURAL ECONOMICS**MR. CHAIRMAN AND DISTINGUISHED MEMBERS OF THE AGRICULTURE, RURAL DEVELOPMENT,  
AND RELATED AGENCIES SUBCOMMITTEE:**

We are pleased to offer this testimony on behalf of the *Center for Farm and Rural Business Finance*. Formalized late in 1991, the Center is a federally assisted initiative undertaken jointly by the Department of Agricultural Economics at the University of Illinois and the Department of Agricultural Economics and Rural Sociology at the University of Arkansas. Again, we want to thank you, Chairman Bumpers, and the Committee for appropriating \$125,000 for FY 1992 and again for FY 1993 to aid in initiating the work of this Center.

In addition to federal funding for FY 1993, the Center is supported through the following funds:

- . \$240,500 in faculty-researcher salaries through the Illinois and Arkansas Agricultural Experiment Stations;
- . \$45,000 from the State of Illinois; and
- . \$86,000 from private and finance industry sources.

To fully establish and institutionalize the Center, an additional \$650,000 in federal funding is requested in FY 1994.

**Background and Need.** The Center is a continuing response to the major upheaval and change among the providers of financial capital for U.S. farm and rural businesses through the mid-1980s and continuing into the '90s. During this period, producers and capital providers have retrenched; new players have entered the field; laws affecting the industry have been altered at state and federal levels; a patchwork of state-sponsored programs have emerged; structural changes in the banking and Farm Credit systems have prompted new strength but also uncertainty.

During the 1990s, the financial industry is being internationalized; vertical coordination is restructuring farm and rural businesses with strong financial implications for producers and integrators and their capital providers as well.

Now, the immediate efforts to reduce the federal deficit include reductions in farm program payments and government direct credit programs with apparent significant cost increases to farm and rural businesses through new energy taxes and increased user fees. Despite the long-term benefits of deficit reduction, the farm and rural economies are experiencing greatly increased uncertainties while their capital providers are reevaluating their commitments to rural capital uses.

On top of the inherent risks associated with the provision of capital to farm and rural sectors, there is a higher-than-ever premium on information and understanding of credit relationships among the changing providers and users of essential capital in rural America. In response, the Center provides an ongoing and objective research and information base for decision-making by farm and rural businesses, their lenders, investors and policy makers.

**Long-Term Focus.** The ongoing work of the Center is targeted at three levels of inquiry:

1. financial management and performance of farm and rural businesses;
2. financial markets and credit institutions serving rural America; and

3. farm and rural business financial and credit policies and programs of state and federal government.

**Accomplishments.** A major effort of the Center has been to organize, establish working relationships, make the Center known, and initiate the work of the Center. During its first full year of existence, the Center has pursued three principal areas of activity: 1) *Credit Relationships in Agricultural/rural finance*; 2) *Vertical Coordination and Financing in Agriculture*; 3) outreach to a rapidly changing industry through the *National Symposium for Agricultural Finance Executives*.

Among the noted accomplishments in these three areas of activity are the following.

Credit Relationships in Agricultural/Rural Finance. In the area of Credit Relationships the Center has:

- . Published *A Farmers Guide to Agricultural Credit* that helps farmers better understand new developments in credit by outlining a practical approach to evaluating loans.
- . Published *Financial Characteristics of Illinois Farms*, an annual publication that provides benchmark financial ratios and financial statement data for farms classified by size, type, tenure, leverage, and age of operator.
- . Surveyed midwestern agricultural banks to identify their credit evaluation and risk assessment procedures, and consistency of credit scoring models.
- . Built a credit scoring model for lenders to use in reviewing the quality of their agricultural loan portfolios using recommendations of the Farm Financial Standards Task Force, along with a team of agricultural loan personnel.
- . Documented the feasibility of using a combination of actual and simulated farm-level financial data to formulate credit scoring models with classification accuracy similar to models using estimated traditional statistical procedures.
- . Studied, through a second midwestern survey, the characteristics of banks using risk-adjusted interest rates and whether this loan pricing practice significantly affects the banks collateral requirements, loan documentation, and other methods of managing the credit risks of agricultural borrowers.
- . Measured the extent of and reasons for differences in farm loan interest rates among geographic regions using banks' balance sheet and income data.
- . Surveyed Chapter 12 filings in Arkansas and Illinois with analysis underway to identify characteristics leading to completion, withdrawal or dismissal of the plans.
- . Surveyed Western Arkansas commercial banks to appraise attitudes about Chapter 12 and lender liability litigation, particularly with respect to the propensity to lend to marginal agricultural borrowers.

Vertical Coordination and Financing in Agriculture. Vertical coordination is expanding rapidly in agriculture due to changes in consumer demand, new technologies in production and handling, and innovations in information management and financing. These developments pose significant managerial and structural implications for producers, agribusiness firms and their capital providers. The Center is, therefore, dedicating a major share of its resources to understanding

these contractual arrangements and the resulting information problems and incentives for the parties. In this area, the Center has:

- . Developed and implemented a unique *focus on the relationships between vertical coordination and financial structure*.
- . Identified important concerns for financing assets used in vertically coordinated production. This work is part of a number of projects that address the financial implications of the increasingly common vertical contracts in agricultural production.
- . Developed case studies to highlight the problems and benefits associated with contract production and other forms of vertical coordination.
- . Implemented a project to explore how key characteristics of production arrangements, asset holdings, and contracting terms influence the emerging governance structures utilized to accomplish vertical coordination.

The National Symposium for Agricultural Finance Executives.

Responding to the changing and increasingly diverse and non-traditional channels through which capital is being provided to farm and rural businesses, the Center hosted the first annual National Symposium for Agricultural Finance Executives in April of 1992. This major initiative of the Center provides an annual and unique forum for major decision-makers involved with the financing of farm and rural businesses -- providers, users, scholars, and policy makers -- to consider and interact on strategic issues of common concern.

**Work in Progress.** Continuing to pursue the three principal areas of activity, among major projects pending during 1993 will be to:

- . Identify and quantify *small farm growth potential* and the resulting contributions of those farms to financial activity in rural areas.
- . Evaluate the *costs and benefits of state and federally sponsored young farmer loan guarantee programs* and to assess their impacts on farm and rural communities.
- . Construct and implement a computer model of representative farms to evaluate the *farm-level effects of FmHA young farmer lending programs and the potential for borrowers to graduate from those programs to commercial sources of credit*.
- . Develop a *model for valuation of loan guarantees* that will be useful in setting guarantee fees and other terms and in *gauging the aggregate liability of a loan guaranty program* based upon a pool of participants.
- . Identify and compare against alternative programs, the *costs and benefits of U.S. export loan guarantee programs*.
- . Evaluate the *changing role and structure of the farm credit banks* through agency cost analysis.
- . Document and evaluate the *impact of Chapter 12 bankruptcy* on a sample of Chapter 12 filers and their lenders.
- . Survey and document the *cost-structure of nontraditional lenders to agriculture*.
- . Assess the *implications for financing under vertically coordinated agricultural production*.



- Evaluate the *economic efficiencies of commercial banks lending to agriculture* and the effects of differing empirical methodologies upon the resulting empirical performance data.
- Evaluate the role of *reverse mortgages as financial management tools* in farm retirement/transition planning.
- Examine the *performance of farmland markets* in terms of turnover and transfer mechanisms.
- Conceptualize and measure the effects of *agency cost controls in credit relationships on efficiency and capitalization of agricultural production units*.
- Develop a computerized model to quickly and accurately determine the *merits of a proposed farm loan refinancing*.

Again, as a major program of the Center, the Center has just concluded the second annual *National Symposium for Agricultural Finance Executives* in April of 1993.

**Resources.** The Center draws primarily from the combined resources of the Universities of Illinois and Arkansas, each with a record of consistent leadership in agricultural and rural finance and in agricultural law.<sup>1</sup> The work of the Center is carried out by a team of thirty-two faculty, academic professionals and graduate students at these two institutions. Ensuring a multi-regional approach to the issues involved, however, the Center draws upon the resources of other institutions as well.

**Endorsement.** The Center continues to enjoy a broad base of support with special assistance and active involvement of the Illinois and Arkansas Farm Bureau; AgriBank, FCB in St. Paul, MN and the Farm Credit Associations of Illinois and Arkansas. Endorsers of the Center include some thirty regional and national financial, agricultural and trade organizations including the American Bankers Association, the Farm Credit Council, the National Rural Electric Cooperative Association, CoBank, National Corn Growers Association, AgriBank, FCB, Riceland Foods, SF Services, Arkansas and Illinois Farm Bureaus, Arkansas Rural Electric Cooperatives, and Farm Credit Associations throughout Arkansas and Illinois.

**Summary.** The Center for Farm and Rural Business Finance is a program of ongoing research and education targeted at the financing of farm and rural businesses. It is a response to the information needs of these businesses, their credit providers and policy makers following the economic upheaval of the 1980s and the now increased uncertainties for the farm and rural sectors through the balance of the 1990s. With state and private funding and with appropriations of \$125,000 for FY 1992 and FY 1993 the work of the Center is underway. An appropriation of \$650,000 is needed to complete the requisite \$900,000 in federal start-up assistance to establish the Center and its program of essential farm and rural business research and financial information.

---

<sup>1</sup> According to a recent survey of "ag school deans" reported in the mid-March 1993 issue of *Farm Futures* magazine and referring to the Center, the University of Illinois "... is considered the best place to study ag finance."

STATEMENT OF STANLEY O. IKENBERRY, PRESIDENT, W. REGINALD GOMES, DEAN, COLLEGE OF AGRICULTURE, AND DONALD A. HOLT, DIRECTOR, AGRICULTURAL EXPERIMENT STATION

MR. CHAIRMAN AND DISTINGUISHED MEMBERS OF THE AGRICULTURE, RURAL DEVELOPMENT, AND RELATED AGENCIES SUBCOMMITTEE:

Our testimony is on behalf of the federally-funded project entitled "Studies to Reduce the Aflatoxin Problem in Corn" being carried out in the laboratories of Professors J. Widholm and D. White at the University of Illinois. We wish to thank you, Mr. Bumpers, and the Committee for appropriating \$486,000 to date for this important research.

We are happy to report that, enabled by this support, our scientists are making good progress toward developing effective measures to reduce or eliminate aflatoxin in corn grain. Of course, because of the complexity of the plant/fungus/environment relationship and the genetic diversity of corn hybrids in use, it will take time to implement fully the prototype resistance and control measures developed in the project.

Aflatoxin on corn is a very important problem. The problem is exacerbated by moisture stress. If only 5 to 30 percent of the crop is under moisture stress, direct losses in yield and quality are estimated at \$500 million. Of course, this loss estimate does not include the harmful social and economic effects of aflatoxin that may find its way into corn-based food products and pose a significant health hazard to consumers. This is the most important aspect of the aflatoxin problem and one that we are working hard to eliminate.

We request that the Committee appropriate \$180,000 to support the program in fiscal year 1994. This amount will allow us to maintain the momentum and productivity of this innovative aflatoxin research program and to capitalize on the progress made to date, which is summarized below.

#### Field and Mature Grain Evaluation

The method for inoculating corn ears in the field with *Aspergillus flavus*, the fungus which produces aflatoxin, was further refined in the summer of 1992. The inoculating device consists of rows of pins mounted in an aluminum bar. In the center of the pins is a larger needle through which a spore suspension is injected under the husk of the ear. The inoculator is aligned with the ear and the pins pushed through the husk and into the kernels. The inoculator is attached to a pump that moves inoculant from a backpack sprayer. Ears are inoculated 20 days after pollination and rated two to three weeks later.

Fifteen widely used commercial hybrids were inoculated in the summers of 1991 and 1992 and rated by visual observation of fungal growth and chemical analysis of aflatoxin production. The hybrids differ considerably in susceptibility to *A. flavus* and aflatoxin production. Hybrids that were identified as having exceptionally high levels of aflatoxin during the drought of 1988 were identified in our tests as being among the most susceptible to the causal organism. None of the widely grown hybrids have enough resistance to prevent the development of aflatoxin in natural conditions. It is apparent from this and previous research that all commercial hybrids grown in the Midwest are susceptible to *A. flavus* and aflatoxin production.

Corn inbreds Mo17 and B73 are used as parents in most of the widely grown corn hybrids. They are both susceptible to the fungus that produces aflatoxin. In 1991 and 1992, our scientists crossed these inbreds with inbreds found in our tests to be much more resistant to the aflatoxin-producing fungus. Several inbreds were identified that impart much more resistance than exists in widely grown hybrids. Some of the crosses had more resistance than late maturing southern types that previously were thought to be the most resistant.

Several of the inbreds provide resistance to both Mo17 and B73 and will be most valuable for further studies. Results of 1991 and 1992 studies suggest that our scientists have identified some sources of resistance that are both dominant and simply inherited. If mode of inheritance studies planned for the 1993 season bear out this conclusion, plant breeders could begin incorporating that resistance into inbreds used for commercial hybrid production as early as 1994.

### Tissue Culture

Our scientists developed and are refining a system for culturing corn tissue (callus) and *A. flavus* together so their interactions can be studied in detail in the laboratory. The fungus grows so rapidly in the culture medium that means to slow it down had to be developed. This system permits rapid screening of a large number of corn genotypes for resistance to *A. flavus* or other pests. It also enables more effective studies of the biochemistry and physiology of the host/parasite relationship.

To use this system, the scientists had to develop tissue cultures (calli) of all corn lines being evaluated in this study. They also had to develop special calli that can be used to generate whole plants. These unique calli, which only exist in this study, will be used for the transformation experiments described in the next section.

### Transformation

In the most unique and promising development in this project, our scientists have cloned the genes encoding the enzymes chitinase and B-1, 3-glucanase. These are antifungal proteins whose normal function is to degrade fungal cell walls in response to infection. We have used these clones as probes in studies to determine the pattern of expression of chitinase and B-1, 3-glucanase genes in corn kernels challenged with *A. flavus*.

Although high levels of expression of these genes were observed in leaf samples, only very low levels of expression were found in seed tissues. This may be why commonly used hybrids have little resistance to the fungus. In a second unique and exciting breakthrough in this project, our scientists developed so-called gene promoters that cause genes to be expressed in seed tissues. The next phase of this work is to transfer these genes and the associated tissue-specific promoters into corn plants.

Our scientists have initiated studies to evaluate the efficiency of these specific gene constructs in controlling *A. flavus* growth in maize cell cultures. Such studies are the first step in producing transgenic corn plants with the ability to produce high levels of antifungal proteins in a seed-specific manner.

Generation of plants with high levels of chitinase and B-1, 3-glucanase enzymes in seed tissues would be a major breakthrough for development of corn plants possessing resistance to *A. flavus* infection. Such gene transformation work, however, is a difficult and time-consuming process. To illustrate, once transformed cell cultures are available, at least nine months are required to grow these cells into mature plants from which seed may be obtained for subsequent analyses.

This portion of the project requires sufficient resources (personnel and supplies) if we are to proceed toward our goal of engineering corn plants with a high degree of resistance to fungal pathogens. Although there is a strong possibility that transformed cell cultures would be available during the coming year, it is highly unlikely that any plants would be regenerated from these cultures in this time frame. Additional support (through 1994) would provide the opportunity to realize the full potential benefits from this project.

*Aspergillus flavus* and aflatoxin production in corn grain  
following harvest

Results from 1991 and 1992 studies indicate that *A. flavus* spreads after harvest from infected kernels to uninfected kernels in storage. In our studies we found that by the summer following harvest, more than half of the aflatoxin in the grain is a result of the spreading of the fungus during storage in the bin. The use of low rates of fungicides on grain at harvest prevented much of the spread between infected and healthy kernels in the bin. It must be emphasized that the fungicide does not destroy the fungus within kernels that were infected prior to harvest. Therefore, the fungicides, while capable of inhibiting some of the aflatoxin production in grain following harvest, neither eradicate the fungus nor completely prevent aflatoxin production.

The fungicide system of control was developed to be used only in emergency situations, which may occur again before genetic resistance is commonly available to farmers. Studies on the spread of *A. flavus* and aflatoxin production in bins need to continue through 1994. By 1994, one of the fungicides used in our studies may be registered by the Environmental Protection Agency for use by farmers. We want to make sure we know how best to manage these fungicides by the time they are in use.

Summary and request for support

This project is a multifaceted approach to the aflatoxin problem in corn. It includes developing field screening techniques, tissue culture approaches, and genetic engineering techniques. The ultimate goal is to identify or produce corn genotypes that resist aflatoxin production. Such material can then be used by breeders to transfer aflatoxin resistance to other hybrids in wide use.

Corn inbreds with some degree of resistance have been identified. Much has been learned about the mechanism of inheritance of aflatoxin resistance. The genes encoding key resistance enzymes have been cloned. A promotor that causes the genes to be expressed in corn kernels was developed. Efforts are underway to incorporate those genes into widely used corn inbreds. Work is also proceeding on ways to control the problem in stored corn. An appropriation of \$180,000 in FY 1994 would permit us to continue this important research.

## INTERNATIONAL ASSOCIATION OF FISH AND WILDLIFE AGENCIES

## STATEMENT OF R. MAX PETERSON, EXECUTIVE VICE PRESIDENT

The International Association of Fish and Wildlife Agencies, founded in 1902, is a quasi-governmental organization of public agencies charged with the protection and management of North America's fish and wildlife resources. The Association's governmental members include the fish and wildlife agencies of the states, provinces, and federal governments of the U.S., Canada, and Mexico. All 50 states are members. The Association has been a key organization in promoting sound resource management and strengthening federal, state, and private cooperation in protecting and managing fish and wildlife and their habitats in the public interest. The Association appreciates the opportunity to share our perspectives with you.

AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE (ASCS)

The Association offers the following budget recommendations with the full knowledge that the Administration has proposed reorganization of the U.S. Department of Agriculture. The Association is concerned that the proposal for reorganization by the Administration would consolidate an agency with largely financial assistance responsibilities (FmHA) and ASCS with those (SCS) delivering technical assistance to agricultural landowners for natural resources conservation.

An adequately funded budget for the ASCS is essential to implement the conservation provisions of the 1985 Food Security Act (FSA) and the 1990 Food, Agriculture, Conservation and Trade (FACT) Act. ASCS programs have tremendous quantifiable impacts on natural resources, and yield substantial public as well as private benefits.

Agricultural activities have been the leading cause of non-point source pollution and wetland loss and degradation. Building on the provisions of the 1985 FSA and the 1990 FACT Act, the Association wants to ensure that each program accomplishes a still broader range of natural resource objectives related to surface water, wetlands, and fish and wildlife habitat.

We compliment ASCS' efforts to obtain funding to implement the President's wetland and water quality initiatives. The USDA and ASCS commitment to those initiatives is well reflected in the 1994 budget. We recommend that ASCS make every effort to ensure that language used in its easements and agreements provide a firm legal base for administration and are user-friendly.

The Association recognizes ASCS' important role in the Wetlands Reserve Program (WRP) and applauds the recognition by the Administration that the program become national in scope, by recommending an FY 1994 funding level of \$370.3 million. The proposed staff reductions should not include personnel who will be needed to implement the proposed increased enrollment of 450 thousand acres of WRP. The Association is concerned about the potential inability of SCS to provide appropriate and sufficient technical support for this large increase of funding. The Association recommends that sufficient staff years and funds be provided for administrative assistance to meet expanded WRP and CRP goals.

IAFWA supports the transfer of \$10 million from ASCS to be used by SCS for technical assistance for the Agricultural Conservation Program (ACP). The Association also recognizes that Congress will likely restore some level of funding to this program; however, this restoration should not be done at the expense of other, high priority programs, such as the Wetland Reserve Program. The International also recommends that ASCS at the national level allocate a reasonable proportion of ACP funds for fish and wildlife practices.

The multi-year set-aside cost-share provisions of the 1990 FACT Act are funded through the Commodity Credit Corporation (CCC). The program provides 25 percent cost-share assistance to landowners for the establishment of perennial cover on set-aside lands under a



multi-year contract. While a funding authorization is made by ASCS related to this program, it does not necessarily limit funding through the CCC. The IAFWA recommends continued funding be provided for multi-year set-aside cost-share assistance with specific report language clarifying legislative intent that funds can be used in states where annual cover requirements are not mandated due to summer fallow. The International also recommends that a higher level of cost-share assistance be considered to encourage greater participation in the multi-year set-aside program.

In addition to its conservation programs, ASCS administers a major \$6-17 billion commodity program that affects more than 220 million acres of commodity cropland base. This includes more than 40 million acres that are idled annually under the Acreage Conservation Reserve. The 1990 FACT requires perennial vegetative cover on 50 percent of ACR lands to reduce soil erosion, help abate flow of agriculture contaminants to groundwater and surface waters, and to provide wildlife habitat. This program should explicitly support the President's water quality initiative. The International recommends that the 50 percent cover requirement be implemented and enforced to ensure optimum public benefits from sizable taxpayer expenditures in USDA commodity programs.

The Water Quality Incentives Program could contribute significantly to the President's water quality initiatives. The International supports the Administration's proposed \$4 million increase for the Water Quality Incentives Program (WOIP). However, we recommend that substantially increased emphasis be placed on the wetland or wildlife habitat options authorized for the WOIP.

Requests for assistance from the Forestry Incentives Program (FIP) outstrip the funds available, reflecting the need for the program. The International supports and applauds the FY 1994 proposal for a \$300,000 increase above the FY 1993 level. The sunset clauses for the Forestry Incentive Program are up for review in 1995. The IAFWA recommends that ASCS be prepared to identify the accomplishments of the FIP, so that it may be reauthorized in the 1995 Farm Bill.

The Association urges that a rigorous interagency evaluation of the Water Quality National Demonstration Projects and USDA Non-point Source Hydrologic Units projects be completed as soon as possible so that beneficial techniques can be identified and the results be made available for application.

The Association strongly recommends that in the FY 1994 and future budgets, ASCS continue to review program expenditures and redirect, wherever feasible, funds from short-term to long-term practices.

#### SOIL CONSERVATION SERVICE (SCS)

The International Association of Fish and Wildlife Agencies offers the following supplemental comments with the full knowledge that the Administration has proposed reorganization of the U.S. Department of Agriculture. This Association is concerned that the proposal for reorganization by the Administration would consolidate an agency with largely financial assistance responsibilities (FmHA) with two (SCS and ASCS) delivering technical assistance for natural resources conservation to agricultural landowners. Regardless of the organizational arrangements, there is a need for adequate technical assistance that is now provided by SCS.

The Soil Conservation Service has immense responsibilities for implementing the conservation provisions of the 1985 Food Security Act (FSA) and the 1990 Food, Agriculture, Conservation and Trade (FACT) Act, such as the technical assistance requirements for the fiscal year 1994 one million-acre signup goal for CRP and a 450,000-acre signup for WRP. The Association, while applauding the large increased funding for WRP, is most concerned about SCS' ability to provide increased technical assistance to meet program goals in the face

of a proposed reduced workforce. The Association recommends that sufficient staff years and funds be provided for technical assistance to meet expanded WRP and CRP goals. The Association also strongly recommends that funding for technical assistance to implement the WRP and CRP programs remain available until program goals are met.

The 1990 FACT Act mandated that State Technical Committees be created to facilitate interagency cooperation to implement the conservation provisions. Not establishing and funding these Committees is clearly inconsistent with the law and omits an opportunity to improve on-the-ground service to the farm community. The Association strongly urges the Congress to provide necessary funding to implement the State Technical Committees, and that the time of agency people who participate in Technical Committee activities as a part of their normal coordination activities not be charged to advisory committee functions. Federal-State coordination is an ongoing normal function which is required with or without a formal Technical Committee.

The Association realizes that most wetland mapping is being performed on a requested farm-by-farm basis. However, we believe that the need for these maps is much broader and urge SCS to proceed as soon as possible, under the guidance of the 1990 FACT Act. The Association supports an SCS goal of expeditiously completing the wetland determinations required to implement the swampbuster provisions of the 1985 FSA and the 1990 FACT Act. The Association wishes to continue to work with SCS to help achieve these goals.

The Association recognizes that SCS continues to have an enormous responsibility to develop conservation plans that bring landowners into compliance with provisions of the 1985 and 1990 FACT Act by December 31, 1994. With up to 60% of the work on conservation compliance plans to be done, personnel reductions proposed in this budget present an impossible task for SCS. Efforts should be carried out at a level to ensure that all conservation plans are implemented by the end of 1994, thereby allowing producers to remain eligible for USDA program benefits.

The Association reiterates its support for small watershed planning and construction and the Resource Conservation and Development Projects, with at least 25 percent of appropriated funds earmarked for land treatment and water quality management. These programs provide enhanced wetland functions to retain floodwaters, improve water quality and quantity, and provide fish and wildlife habitat. Nonstructural land treatment activities require state and local matching funds and are therefore leveraged to provide greater conservation benefits for each federal dollar spent while promoting valuable partnerships among states, local agencies, and other organizations.

#### ANIMAL AND PLANT HEALTH INSPECTION SERVICE (APHIS)

APHIS is the Federal agency responsible for controlling wildlife damage to agriculture, aquaculture, forest, range and other natural resources; for protecting public health and safety through control of wildlife-borne diseases; and wildlife control at airports. Its control activities are based on the principles of wildlife management and integrated damage management and are carried out cooperatively with State fish and wildlife agencies. Most APHIS operational work is cost shared between the Federal Animal Damage Control (ADC) program, State and county governments, agricultural producers, and other cooperators.

The cooperation and support of the agricultural community is essential to maintaining wildlife populations because much of the Nation's wildlife exist on private, agricultural lands. A progressive animal damage control program which reduces the adverse impact of wildlife populations is necessary to maintain the support of the agrarian community and to counter increasing pressures for indemnity due to wildlife damage.

The Association commends APHIS/ADC for the continued improvement to be in tune with the changing public values for the Nation's wildlife while remaining responsive to the

emerging wildlife problems. The Association suggests the Agency consider changing the name of Animal Damage Control to better reflect the positive direction of the program.

However, it is still underfunded and understaffed, as it was at the time of transfer from the Department of Interior. ADC can be progressive, responsible, and successful only if adequately funded.

The Association applauds the Administration's FY 1994 budget for ADC's operations and animal control methods development. However, the Association invites the attention of Congress to the need for new alternative control methods to cope with the increasing number and diversity of wildlife damage problems. Many of the current control tools are becoming less acceptable to the public. The only source of new methods is through research. The Association encourages Congress to provide funds specifically for the discovery of new alternative approaches to solve these sensitive problems caused by wildlife and provide an increase of \$8.5 million for development of alternative methods of control.

Related to this issue, the Association supported the Congressional action in the original appropriation of \$8.5 million for the first phase of the move of the Denver Wildlife Research Center from the congested Denver Federal Center to the campus of Colorado State University. The Association encourages Congress to complete its commitment to establish a center for wildlife damage research and provide the funds to finish this project.

The Association has become aware of the serious workload burden that the National Environmental Policy Act has placed on the ADC program and its ability to deliver needed services. Additionally, the Forest Service and APHIS have agreed that APHIS would do NEPA compliance assessments for control activities on National Forest System lands, requiring even more commitment of personnel and resources. The Association supports an increase of \$5 million to enable the program to meet its compliance requirements and maintain its capability to respond to requests for help from the public.

In summary, the Association supports the Administration's budget of \$26.2 million for operations and \$9.5 million for animal control methods development; further recommends adding \$5 million to operations to cover the burden of complying with NEPA; and recommends investing \$8.5 million to develop alternative methods that are acceptable by the public. We encourage the appropriation of an additional \$500,000 in support of continuing education programs for APHIS/ADC personnel to upgrade their professional skills to provide contemporary ADC services. We further encourage the Congress to complete the commitment to move the Denver Wildlife Research Center to the Colorado State University campus at Ft. Collins, Colorado.

#### EXTENSION SERVICE -- U.S. DEPARTMENT OF AGRICULTURE

The President's budget request increased Smith-Lever 3(b&c) funds by 2.7% to \$270 million for FY 94, and a total budget of \$431.3 million, which is a \$6.3 million increase over the FY 93 appropriation. The Association supports the recognition of the significance of these programs by the increased funding request.

The Administration's efforts to provide for an improved balance of base and targeted programs are appreciated. However, we recommend as a minimum, a 4% increase for Extension, i.e., that Smith-Lever 3(b&c) funds be at a level of \$273,220,480, provided that; not less than 35% of this increase be applied to environmental stewardship education programs. This will enable programs to cope with inflation and to retain the capability to redirect limited funding to address critical emerging issues.

We are pleased that the Extension 4-H Youth natural resource programs and projects continue to increase with over 1.2 million youngsters presently enrolled from both urban and



rural communities across the nation. However, without a commitment of appropriate resources to support this program, the IAFWA questions if states will commit already targeted 3(b&c) funds to ensure program effectiveness.

The IAFWA is encouraged that the Administration is requesting an increase to \$3.765 million for the Renewable Resources Extension Act (RREA). This will be a major stimulus for USDA to address the increasing critical need for natural resource and environmental stewardship education targeted to private landowners and managers (urban and rural), 4-H youth and the general public. Nonetheless, this increase is not adequate for the task at hand.

The Association recommends that the Renewable Resources Extension Act be funded at a minimum level of \$8 million in FY 94. This Act passed in 1978 with an authorization for \$15 million, and has been reauthorized to the year 2000. It was first funded in 1982 at \$2 million, and was increased to \$2.765 million in 1988, where it has remained through FY 93. The IAFWA recognizes and appreciates the \$1 million increase for RREA, targeted at forest ecosystem management in the President's budget for FY 94. These limited funds, when apportioned to State Cooperative Extension Services (CES's), have been effectively leveraged with cooperating partnerships at an average of about three to one, with a focus on dissemination of education programs to private landowners (rural and urban). However, this limited funding for RREA has still not enabled CES's to develop the critical mass of natural resources expertise in many states to address clientele needs.

The Association recognizes the capability of the Cooperative Extension System to effect positive change in landowners, managers, community decision makers, and the public in the attitudes about the environment and their capabilities to implement new management technologies to sustain a viable natural resource base and a competitive and profitable agriculture. It is most appropriate that the Cooperative Extension System, with its grass roots credibility and delivery system be adequately funded to help the Nation's private landowners and managers use new technologies to move towards a more sustainable society.

The Association notes that \$3 million has been recommended in the President's budget for sustainable agriculture. The Association recommends not less than 20% of the total appropriation should be dedicated to restoring, managing, and sustaining the environment and the Nation's natural resource base upon which the agricultural economy depends.

In summary, the International Association of Fish and Wildlife Agencies recommends an increase in funding for the Renewable Resources Extension Act to \$8 million for 1994. We further recommend that for the Sustainable Agriculture increase, not less than 20% be dedicated to programs for sustaining a viable natural resource base upon which sustainable agriculture depends. Finally, the IAFWA recommends that a 4% increase in Smith-Lever 3(b&c) funds be requested, of which not less than 35% of the total increase would be used to support the Environmental Stewardship Education Program objectives.

#### AGRICULTURAL RESEARCH SERVICE (ARS)

The Agricultural Research Service's (ARS) structure into six broad objectives presents numerous opportunities for research on many important problems affecting agriculture and the resources they support. The Association is particularly interested in the work being done on the development of technologies to protect the environment and the natural resource base.

The ARS base program objective affecting soil, water and air are among the programs most important to the Association. These programs conduct important research on water quality, and agricultural conservation systems to retain soil and reduce runoff and erosion. The 1990 Food, Agriculture, Conservation and Trade Act (FACT) made enormous strides towards improved conservation of the water resources of this country. It is critical that appropriate research be conducted to ensure that the benefits of that legislation be realized. Although much of the research that ARS is presently conducting will address this issue, the funding levels have

historically remained woefully low. The Association urges that the Congress begin to remedy this in their FY 1994 appropriations action.

The Association is also most interested in the work being done by ARS on the Integration of Agricultural Systems. The Association recognizes that some of the most important strides in agricultural research will likely occur in this arena. Cost effective farming systems are available, however, research needs to be done on how to extend these practices to other areas. There is a pressing need to develop practices such as no-till farming and sustainable agriculture which would be made available to the majority of U.S. farmers. It is for these reasons that the Association recommends appropriation enhancement above level funding for this item in FY 1994.

More information is needed on the impact of large grazing animals and the relationship of livestock and wildlife use on rangelands. The restructuring by the agency of the range program to include it under the natural resources group is a step in the right direction. Better understanding of natural rangeland ecosystems -- and how to manage them -- is a complex but researchable problem with high potential for payoff in terms of multiple outputs and environmental quality. Work is needed to develop criteria for monitoring plant, soil and microbial relationships in the face of global, regional and local change. Decision support systems using modern computer-based techniques need to be developed. We recommend enhanced appropriation attention to this item to enable ARS to begin filling the gaps in knowledge, working in concert with State Agricultural Experiment Stations, Universities and the Forest Service.



LIMESTONE SPRINGS FISHING PRESERVE  
STATEMENT OF RICHARD COLANTUNO, CEO

I am pleased for the opportunity to provide testimony concerning an industry perspective of the importance and influence of the Regional Aquaculture Centers. I have served three years on the Technical and Industrial Advisory Council (TIAC) of the Northeastern Regional Aquaculture Center (NRAC) and have had an opportunity to contribute with and directly observe the positive impact the Center has on the industry. NRAC and other Centers have given the industry valuable support by providing viable solutions when researching problems that could have a negative impact on the development of this industry.

As the aquaculture industry grows and develops, many obstacles obstruct this development, which the industry needs to overcome in order to be a viable economic contribution to our society. The Centers provide, with industry input, the necessary research that is needed to overcome these problems. Industry faces problems such as: bird depredation, waste discharge (NPDES), disease controls, and costs for regulatory compliance. These are some examples of what the Centers are now researching to help the industry to become a profitable business sector.

Aquaculture, if it is to grow and develop, must have support from government. These Centers are very important in achieving that goal. A joint effort, with academic, industry, and extension personnel, provides a pragmatic unit that is capable of producing positive results.

NRAC has most recently been involved in researching alternatives which will lessen the economic impact of aquaculture regulations. This has been identified as a real problem facing the industry because it is an industry in its growing stage. All industry needs regulation but economic feasibility is also an important factor. Through the research efforts of NRAC, this problem will be given viable solutions.

In order to guarantee continued progress, the Regional Aquaculture Centers need the appropriate support. I would like to urgently request the increase of appropriation to the authorized level of \$7.5 million/year.

Thank you for your continued support of our industry.

## LOUISIANA AQUACULTURE ASSOCIATION

## STATEMENT OF WALTER LANDRY, PAST PRESIDENT

Thank you, Mr. Chairman, for this opportunity to present testimony supporting the Regional Aquaculture Centers. My name is Walter Landry. I am a sugar cane farmer and aquaculture producer, and currently serve on the Board of Directors of the Louisiana Aquaculture Association (LAA), having previously served as President of that Association. I am also currently President of the Striped Bass Growers Association. My entire career has been based on agricultural production and related industries. With the assistance of aquaculture researchers and extension specialists from various universities throughout the southeastern U.S., I have successfully diversified my farm operations to include production of hybrid striped bass, redfish and catfish.

Now in its fourth year, the Louisiana Aquaculture Association continues to serve as a unified voice for producers of all aquacultured species within the state. Current estimates indicate that the production of aquaculture species provides direct income to approximately 7,000 persons in Louisiana. Over 15 species of fish and shellfish are produced on 150,000 acres of production ponds and 300,000 acres of water bottoms within the state.

The LAA has been recognized by the Louisiana Legislature through a joint resolution as the official representative of production aquaculture within the state. The founding goals of the LAA are, specifically, to 1) influence public policy for the advancement of aquaculture, 2) influence the direction and scope of government-funded aquaculture research and extension, 3) promote the exchange of information among members, and 4) promote the sale and use of Louisiana aquaculture products. Clearly, based on these priorities, the LAA is extremely interested in the funding of the regional aquaculture centers.

The importance of aquaculture to this nation now and for the next 20 years cannot be over-emphasized. Although per capita consumption of seafood has fallen in the United States from a high of 16.2 pounds in 1987 to 14.9 pounds in 1991, consumption of farm-raised seafood products continues to increase. As a result of increased productivity by both growers and processors, real prices for most aquaculture products have fallen during the past several years. This trend, largely a result of the efforts of government-funded research and extension, is expected to continue well into the future.

In contrast, wild-catch fishermen are facing reduced availability of stocks, either directly or through increasingly stringent harvesting quotas. Estimates indicate this nation realized a \$2.6 billion trade deficit for seafood products in 1991. On a world-wide basis, the most recent global estimates available from the United Nations indicate that world fisheries landings declined in 1990, following 12 years of increases.

These factors will continue to increase the competitiveness of aquacultured products compared to wild-caught seafood. In competition with other agricultural animal commodities, one point which should benefit the industry in the future is the advantage of aquatic species over traditional animal industries in converting feeds into consumable protein, resulting in less solid waste and effluent for a comparable level of production.

Aquaculture's recognition by government officials and the general public as an agricultural enterprise was apparent in 1992 with its inclusion in a bill providing for federal disaster assistance and in the Emergency Conservation Program. States with little or no history of aquaculture production are finding they must develop aquaculture research and extension capabilities. The Regional Aquaculture Centers can fill this need in the most cost-effective manner possible.

The Regional Aquaculture Centers have proven to be an important basis for the continued success and expansion of this industry in the U.S. Industry has realized increased benefits from the coordinated use of government funds through the Centers, through demonstration projects, fact sheets, extension bulletins, video materials and problem-solving research.

The aquaculture industry in Louisiana and throughout the country recognizes the generous assistance and support of this Subcommittee, including the current funding level of \$4 million. Considering the increasing importance of aquaculture production in the U.S. during the next decade, we sincerely hope you will provide the fully authorized \$7.5 million amount for the five Regional Aquaculture Centers in the FY94 budget. This funding will be absolutely necessary to keep the U.S. aquaculture industry competitive in a global economy.

Thank you for this opportunity to again offer comments of support for the Regional Aquaculture Centers.

## M&amp;R DURANGO, INC.

## STATEMENT OF LEE ANNE MERRILL, PRESIDENT

I am Lee Anne Merrill, President of M&R Durango, Inc., Bayfield, Colorado.

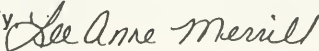
Our company has been in the business of rearing beneficial insects and organisms for the biological pest control industry since 1989. We make these beneficial's available for least toxic insect pest management to a wide variety of the agriculture food crop industry.

There is a desperate need for continuing research in areas of practical application, integrated pest management programs development, interaction of various chemical pesticides, fertilizers and other frequently used agents with beneficial organisms, consumer education efforts and species choice for specific insect pest control applications.

It is for these reasons that I ask that funds be appropriated for the research program at the Beltsville Agricultural Research Center (BARC) of the Agricultural Research Service. Included is research on microbial agents, predators and parasites and feeding stimulants currently underway. However, there is a need to strengthen this existing research by increasing the number of cooperative projects and establish integrated pest management model programs targeted at specific vegetable insect pests.

The Administration has requested additional funds for FY-1994 for strengthening the project as mentioned above. I strongly urge that the \$500,000 requested be appropriated to the Beltsville Agricultural Research Center to assist in this development.

Sincerely,



Lee Anne Merrill  
President

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA  
STATEMENT OF RICHARD W. BALCERZAK, ACTING GENERAL  
MANAGER

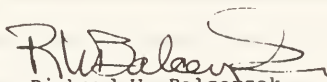
Fiscal Year 1994 Funding for the Department of Agriculture's  
Colorado River Salinity Control Program

I am writing to request your support for adequate federal funding for the Department of Agriculture's Colorado River Salinity Control Program (Program). The Program was authorized by Congress under the Colorado River Basin Salinity Control Act and the Clean Water Act. The Metropolitan Water District of Southern California is responsible for meeting the supplemental water requirements of nearly 16 million people and the economy which supports them. In 1992, Colorado River water was used to meet the majority of these supplemental needs.

Metropolitan is concerned with maintaining the quality of this vital source of water supply. The Colorado River Board of California and the Colorado River Basin Salinity Control Forum, the interstate organization responsible for coordinating the Basin states' salinity control efforts, have recommended a 1994 funding level of \$18.4 million for the Department of Agriculture's on-farm management Program. This level of funding is necessary to meet the on-farm salinity control activities schedule in order to maintain the water quality standards adopted by the seven Colorado River Basin states and approved by the Environmental Protection Agency. The Colorado River Basin states and farmers in the Uinta Basin of Utah, the Big Sandy area of Wyoming, and the Grand Valley, McElmo Creek, and Lower Gunnison areas of Colorado stand ready to pay their combined 51 percent share of the construction costs of this Program. In addition, Program implementation in the Moapa Valley area of Nevada and investigation in the Price-San Rafael area of Utah depend upon the appropriation of adequate federal funding.

Metropolitan concurs with the recommended funding level of \$18.4 million for the Department of Agriculture's activities. Your assistance and support in ensuring sufficient funding of the Colorado River Salinity Control Program for 1994 and beyond would be greatly appreciated by Metropolitan.

Very truly yours,

  
Richard W. Balcerzak  
Acting General Manager



## STATEMENT OF THE MISSISSIPPI STATE UNIVERSITY COOPERATIVE EXTENSION SERVICE

Agriculture is major industry in the United States, dependent upon environmental conditions to produce food and fiber, show profit and protect the environment. Yet, many of the environmental factors needed for accurate decision making are unavailable on a scale small enough for farm field application. Therefore, under the guidance of the National Agricultural Weather Information Service (NAWIS), this program seeks to assess current meteorological technology and develop a parameter-based, spatially arranged data collection and dissemination system to support agriculture. The proposal will improve and augment existing weather data for automated collection and dissemination of weather information. This will increase availability and accuracy of both real-time and forecast information to agriculture for increased production assurance and environmental protection. The enhanced weather and weather-related parameters will be collected in a format for immediate use by the National Weather Service (NWS) program. The resulting information will be tied to proven simulation models, expert systems, and management programs through a private sector data network developed jointly by the National Weather Service Mid-South Agricultural Weather Service Center and the Mississippi State University Cooperative Extension Service, for use by producers and related agricultural industries.

The Mid-South Agricultural Weather Service Center (AWSC) at Stoneville, Mississippi, automatically collects weather information throughout the state from 14 NWS and FAA locations and from 32 cooperative observers. Weather information can also be accessed from some of the 30 privately owned weather stations in the state that collect field specific weather data, but only in a manual mode. The AWSC provides agricultural weather advisories, 30 and 90 day outlooks, crop development model forecasts, guidance to the NWS in Jackson for agrometeorological forecasts, and data/climatological summaries for research. By linking the existing systems with additional stations and installing additional sensors, which would monitor conditions such as soil temperature, soil moisture, leaf wetness, and current existence of rainfall, a more accurate prediction of weather information would be provided to producers through the network. Through better weather prediction, the environment can more easily be protected against a weather related disaster, such as; chemical wash-off, erosion of freshly tilled soils, or unnecessary chemical applications.

Most forecasts and weather information are disseminated through traditional sources such as newspaper, radio, television and some call-in services. The lack of an information network prevents timely and widespread dissemination of weather and crop model forecasts to producers. Since crop model forecasts require real-time weather inputs, this limits the use of models to the very few producers which

have on-site weather stations. The development of an information network will strengthen the NWS Agricultural Weather Program by providing a more responsive service to producers and other clientele.

There are several reliable crop models and software programs for use in crop production. These models are driven by some physical parameters and in a large part by weather information. GOSSYM-COMAX is a cotton crop growth model that is based on weather information and physical crop parameters that are measured in the field. There are several aspects to this model that are used by producers, such as irrigation scheduling, fertility applications, and crop maturity projections, which enhance harvest timing of the crop. At this time, the GOSSYM-COMAX Program is run by only a few production entities. A successful program requires weather data that is field specific, therefore most producers that use the model have purchased their own weather station to ensure accurate and timely weather information. Weather forecasts are also an integral part of the model to predict growth and development and crop needs in the near to distant future. Cotton growth and development can also be tracked very accurately by heat units.

Heat units, calculated on a 60 degree basis (DD60), are used by many producers to time the different stages of growth and maturity of the plant. The DD60 Program, incorporated with an irrigation scheduling program, could be used in a similar manner as the growth model for determination of critical growth stages. This information would assist in making certain field observations, such as tissue analysis for nutrient deficiencies, insect counts, or water stress levels.

In conjunction with the GOSSYM-COMAX model, an insect model is being developed and field tested at this time. The inputs to the insect model are all weather factors that can predict growth, reproduction, and movement of certain insects that pose a threat to cotton. Accurate weather information and forecasts will be imperative to accurately predict insect movement, development, and population build-up.

The Glycium model is a new model just being developed for soybeans. It will require some physical crop growth parameters but is driven mostly on local weather data. Localized weather stations will be needed to make this program readily adaptable by a large number of producers. Accurate real-time weather information is critical to this type of model, in addition to reliable short- and long-term forecasts.

Peanuts, which are a very important regional crop, are very susceptible to a disease known as Cercospora leaf spot. This problem is caused by adverse weather conditions and leaf wetness. There are some very good models to predict this disease and determine when a fungicide should be applied. The basis for the model is a leaf wetness sensor and accurate, real-time weather information and forecasts.

Utilizing existing privately owned weather stations in Mississippi, there is the potential to increase the accuracy of short term (less than six hours) weather forecasts with the new mesoscale weather models that are being developed by NOAA. Another example of information that could be offered would be more accurate and timely soil temperature data. Installation of soil temperature sensors at strategic locations in the Mississippi Delta could provide information to generate maps for different soil types, indicating soil temperature trends in different parts of the Delta. This would be a tremendous asset when making crop management decisions for planting. Today's farmer needs accessible, reliable, detailed information to make affective decisions, and it must be provided in a user-friendly manner.

The Mid-South Weather Service will interface with a computerized bulletin board system at Mississippi State through an Internet connection. There will be between two and five public lines available to access the bulletin board for current and historical weather data, forecasts, and advisories. Through this system, a producer will have the ability to run the model for cotton and soybean growth, the insect model, irrigation scheduling programs, heat unit programs, and the disease prediction model. Producers will also be able to look at any applicable data that is being collected by the system. Producers and related parties will be able to access the system by modem through the County Extension Service offices, or from the Cooperative Extension Service at Mississippi State University, to run the decision making aids or retrieve desired weather data. Special crop advisories by Extension and Research personnel would also be a part of the service offered by the bulletin board system, as well as the potential for an electronic mail system that connects a producer to the County Extension Office or the Cooperative Extension Service State Office at Mississippi State University. Through this system, a producer could eventually have access to internet or some other national electronic communication system for information and decision aids.

Implementation of the project will be in three phases. Phase one will include the assessment of available and needed weather data, specification of missing parameters, identification of spacial arrangements, determination of existing sensor technology, and a needs evaluation of new technology, data collection systems, proper formats and software/hardware packages for data management.

Phase two will involve the installation and implementation of hardware and software systems and sensors to the sites per phase one specifications. The sites will include two farms that produce cotton, soybeans, and peanuts. During this time, tests will be conducted to determine the data collection and delivery systems needed for the Delta Region. Phase three will see continued testing and plans for horizontal expansion of the program to create a statewide information network.

The resulting benefits would include increased accuracy and reliability in weather forecasts and monitoring systems, so that producers in Mississippi could better time planting, tillage, chemical applications, harvest, and post harvest operations. It has been estimated that up to 15% of all herbicide and insecticide applications are washed off by rains within twelve hours of application. Herbicide and insecticide losses due to rain are estimated at \$33,000,000 per year on 1.2 million acres of cotton and 1.8 million acres of soybeans. An additional \$1.2-1.4 million could be saved in insecticide costs, due to better predictions of insect presence. Soil temperature information and forecasts could save \$8.5 million per year in replant costs for cotton and soybeans, and an additional \$6-7 million in fungicide costs at planting. Leaf wetness forecasts would save peanut producers \$25-60 per acre in fungicide costs on the 6,000 acres in Mississippi. If successful, this information could be utilized on 1.6 million acres of peanuts throughout the southern region, with a potential savings of \$96 million.

The focus of the project is to provide accurate, timely access to weather forecasts and weather data generated by the Mid-South Weather Service through the Cooperative Extension Service at Mississippi State University and the County Extension offices. This program seeks to improve weather data collection systems, soil temperature information, short-range forecasts, accessibility for the end user (agricultural producers), and an understanding by producers of how to utilize this information. The project will attempt to increase confidence in weather forecasts by agriculture, and deliver the information in an efficient and user-friendly manner.

Cost of the project will be \$900,000 total for the three-year program.

## MONSANTO COMPANY

## STATEMENT OF GANESH M. KISHORE, DIRECTOR, FOOD QUALITY

Monsanto Company has operations in your state which include Jacob Hartz Seed Company in Stuttgart, Arkansas.

I am writing to request continuing federal support for the Consortium for Plant Biotechnology Research (formerly The Midwest Plant Biotechnology Consortium). We are grateful for the Subcommittee's support in the amount of \$2.8 million last year, and hope funds can be found for an increase in fiscal year 1994. We ask you to support the Consortium's request for \$5 million in FY 1994 to provide for the continuation of projects started in 1993 and new starts in 1994.

The Consortium for Plant Biotechnology Research supports competitively selected projects for research and technology transfer in plant biotechnology, work that is critical for maintaining the strength and competitiveness of U.S. agriculture.

The United States is number one in the world in the quality of its university basic research. All too often, however, the results of this outstanding research do not get translated into solving society's problems. The Consortium for Plant Biotechnology Research is changing that by harnessing the research capabilities of world class universities to focus on solving agricultural problems with important industrial applications. The strong corporate involvement in the Consortium helps to keep the projects funded with this money in close touch with the search for practical solutions to our national agricultural problems. I believe that the focusing of scarce research dollars on university projects with identified applications makes a great deal of sense for U.S. agriculture and the taxpayers who are supporting this effort.

A unique strength of the Consortium is the highly competitive process it uses to select research projects. The selection process combines rigorous peer review with built-in technology transfer through industrial member involvement. The Consortium's thorough research project selection process insures that only the highest quality research with the most potential for practical applications to meet U.S. agricultural needs is funded. Thus, Consortium projects have achieved significant breakthroughs in such areas as improvement of grass species (corn, sorghum, rice and oats), nutritional enhancement of grains, control of crop pests, and production of high fructose corn syrup.

Monsanto Company has derived several very valuable benefits from its association with and investment in the Consortium. First, we have been able to initiate research probes in a number of areas of plant biotechnology beyond our own internal efforts.

Second, membership in the Consortium has allowed interactions with academic researchers by providing a structure for targeted and open conversations. Prior to the existence of the Consortium, a formal mechanism for extensive interactions between the academic community, government, and industrial researchers in "targeted" areas of plant biotechnology did not exist.

Third, the Consortium has provided a mechanism by which industrial scientists can establish liaison with cutting-edge academicians and government scientists and ensure that the leading and important scientific discoveries in our institutions are used to foster the competitive advantage of U.S. farmers and agro-based industries.

Finally, the Consortium has initiated dialog between different industrial scientists who can work together to benefit their respective organizations and the United States.



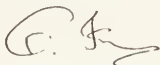
In summary, it is my opinion that the Consortium has been highly successful in filling a major void in the agro-industry, and its impact is likely to be felt in a significant way during this decade.

At the administrative level, the Consortium has this year incorporated into a tax exempt, not for profit corporation and changed its name to the Consortium for Plant Biotechnology Research, Inc. It is the same program with the same mission and the same members.

Your continued support of the federal-university-industry Consortium is essential. Federal funding is critical to the health of this program. Monsanto Company and most other companies would not be able to compensate for any loss of federal support.

Please do not hesitate to call me if you would like additional information about this important program.

Sincerely,



Dr. Ganesh M. Kishore  
Director, Food Quality

## STATEMENT OF THE NATIONAL ALLIANCE FOR FAIR COMPETITION

The National Alliance For Fair Competition (NAFC) is a non-profit organization representing six national trade associations whose more than 20,000 member firms are engaged in the specialty contracting, energy servicing, energy fuel supply, heating, air conditioning, plumbing, electrical, material supply industries. These firms are overwhelmingly small businesses, many of which are family owned and operated.

NAFC is vitally concerned with the continuing and growing threat to the economic livelihood of its members occasioned by unfair competitive actions from Rural Electric Cooperatives and the programs of the Rural Electrification Administration. Despite the almost complete fulfillment of the REA's original mission of electrifying rural America, Congress has before it proposals which will significantly expand REA's scope of authority bringing with it the threat of substantial economic harm to small, independent businesses.

The Small Business Administration (SBA) is greatly concerned with the survivability of independent businesses which face predatory competition from utilities and rural cooperatives. In its 1989 report, *Competition Between Small Businesses and Rural Electric and Telephone Cooperatives in Non-Utility Business*, the agency concluded: "... the diversification of cooperatives and regulated utilities into non-utility businesses has significant implications to the competition in the unregulated markets, particularly the effect of this diversification on the ability of certain small businesses to survive."

The Report went on to state that "Competition with monopoly utilities in the non-utility market can result in the destruction of small business competitors who do not have the low cost financing, management talents, marketing advantages and special tax treatment..." enjoyed by RECs and their non-utility ventures.

### Nature Of The Problem

Competition between rural electric cooperatives (RECs) and small businesses has resulted from the increasing trend of diversification by such co-ops into non-utility areas and markets traditionally served by private sector sources. For NAFC's members, these diversified activities include natural gas marketing and sales, appliance sales and service, installation of energy and energy related equipment on customer premises, heating, air conditioning, and plumbing services.

Private sector businesses can find it impossible to compete with REC non-utility ventures since co-ops enjoy several significant financial advantages which permit them to offer products and services at below-market prices. Among these advantages are:

Preferential tax treatment

Preferential financing from REA loan and loan guarantee programs

Lack of regulation and oversight permitting cross subsidization of non-utility ventures

#### 1. Inadequate Regulation and Cross-Subsidization

By far, the most significant of these advantages is the potential for RECs to subsidize their non-utility ventures with funds accumulated through their utility operations. Cross-subsidization can result in the misallocation of direct or joint costs to a REC's utility operations harming ratepayers as well as competitor since they will have to pay more for their utility services.

Such cross-subsidies permit RECs to sell, service, and install appliances, heating and cooling equipment at very low prices to encourage fuel switching and, thus, capture the largest possible market share for the type of energy provided by the REC. The competition by the REC utility for an increased share of the utility market encourages every effort to sell and install the largest number of appliances at artificially low prices. Such actions disrupt the market for appliances, installation of appliances, and fuel markets. Further, the REC non-utility venture (as opposed to the utility itself) may engage in the same activities in order to develop and capture the largest possible market share for its products and services and, in the process, drive out independent competitors which are invariably small businesses which find it impossible to compete in such a climate. By reducing the number of competitors, the REC

non-utility venture is positioned to raise prices and recoup its lost income in a classic example of predatory pricing.

Regrettably, these actions are subject neither to oversight nor regulation in almost every instance. Most states do not regulate the rates charged by RECs or their diversification activities. Thus, illegal cross-subsidization may never be discovered. Furthermore, despite REA audit requirements for borrowers, REA can not demand the financial records of a borrower's non-utility venture unless the REA has loaned funds directly to that entity in order to finance its operation. Once again, illegal cross-subsidies may never be discovered.

State public service commissions, including those few states which regulate RECs, do not require RECs to submit cost allocation reports for review. Neither does the REA audit require a review of such cost allocation procedures. This lack of oversight reinforces the potential for anti-competitive subsidies.

## 2. Preferential Tax Status.

Rural Electrical Cooperatives are organized as tax-exempt entities under section 501(c)(12) of the Internal Revenue Code. This tax-exempt status provides RECs with another economic advantage not enjoyed by competing private sector businesses. Despite the fact that 501(c)(12) organizations are subject to a tax on unrelated business income, many RECs and their non-utility ventures avoid the application of this tax by claiming that income derived from such activities are substantially related to their exempt purpose. Where this occurs, RECs receiving preferential tax treatment as 501(c) entities can pose a severe threat to the existence of private sector firms which do not enjoy such an exemption from income taxes.

In its 1983 Report to the Congress (*Legislation Needed To Improve Administration Of Tax Exemption Provisions For Electric Cooperatives*, GAO/GGD-83-7, January 5, 1983) the General Accounting Office stated:

"GAO recommends that the Congress establish a tax treatment to better recognize the changes in electric cooperatives' operations and activities... Tax exemption, as presently structured, applies across-the-board to all electric cooperatives regardless of the extent and nature of their operations and activities. Yet, many cooperatives have progressed to the point where they closely resemble their for-profit counterparts and earn substantial tax-free income from nonmember sources... In view of this we believe that Congress should evaluate alternative tax treatments and adopt one which would better recognize the changing operations of electric cooperatives and their continuing need for assistance in today's environment."

The GAO report recommended alternatives which would "(1) modify electric cooperatives' nonmember income allowance, or (2) eliminate that allowance, and/or (3) apply tax rules already applicable to other types of cooperatives."

## 3. Preferential Financial Treatment.

RECs enjoy considerable advantages over their small business competitors in terms of financing their diversified activities. First, they have access to REA loan funds at below market rates (presently, 5%). Secondly, the availability of the 100% loan guarantee program means that RECs can borrow money from private sources at rates of interest below what would be charged to private sector businesses due to the reduced risk faced by the lender.

Consequently, such access to capital which is both readily available and available at below market rates permits RECs and their non-utility ventures to offer financing on the products, equipment and services they sell at rates which are below what private sector competitors can offer.

Beyond these two advantages, the REA Administrator is permitted under section 313 to provide zero interest loans or grants to RECs for the purpose of promoting "rural development and job creation projects".

## 4. Other Advantages.

In addition to the three major areas in which RECs enjoy a competitive edge over private sector businesses, RECs also benefit from other advantages. When a non-utility subsidiary of a REC offers

products and services to its existing customer base, it enjoys marketing information which no independent competitor has. RECs have access to customer lists, credit histories, energy usage data, and market research studies. Such valuable information is often transferred to the non-utility venture at little or no cost. In the case of market research studies, these are routinely financed by ratepayers prior to the beginning of any diversified venture. The non-utility venture then enjoys access to this valuable information while ratepayers, including competitors who will suffer the effects of this subsidy, foot the bill.

Name recognition is another advantage conferred to the non-utility venture. It is common practice for such subsidiaries to incorporate the co-ops name and logo on its promotional literature and advertisements. Instant name recognition and credibility of the REC is thus conveyed to the non-utility operation at the moment of its inception.

Cooperatives are also able to add charges incurred for their non-utility business activities to their utility customers monthly bills with little or no expense to the non-utility business. This allows customers of the utility to make monthly payments as part of their utility bill. The costs normally associated with billings would be borne by the non-utility venture if it were not associated with the REC.

Energy audit and usage information generated by the utility operations provide non-utility ventures with valuable information enabling such subsidiaries to tailor appeals to specific customers designed to promote fuel switching or appliance purchases.

#### **Diversification and Economic Development**

Recently, the position has been put forth that REA should greatly expand its rural development programs, even to the extent of adding water and sewage programs to the scope of a redefined agency. Should this occur without substantial revision of the loan programs, tax treatment of RECs and institution of oversight mechanism at the state and federal level, severe economic consequences may result for small businesses which compete for their economic livelihood in these fields.

Through its Associate Member program, the National Rural Utilities Cooperative Finance Corporation (CFC) offers RECs the opportunity to expand into non-electric service areas. This program makes it possible for any REC subsidiary to diversify into areas presently served by competitors by obtaining extremely favorable financing arrangements not available to private sector firms. Expansion of programs in the area of rural development will further promote REC diversification without any safeguards to protect small businesses.

#### **NAFC Recommendations**

NAFC and its members urge the Committee and Congress to enact reforms of REA and its programs to end these abuses. NAFC suggests:

1. Eliminate the 2% loan program entirely and increase the rate for direct REA loans to a level equal to the federal borrowing rate.
2. Limit the geographic areas receiving REA loans and loan guarantees to truly rural areas in markets not adequately served by other small businesses and develop criteria for means testing RECs to eliminate those which do not need taxpayer financed assistance.
3. Adopt alternative tax treatment which recognizes the changing operations of electric cooperatives.
4. Establish a clear grant of authority to state public service commissions to regulate RECs in the same fashion as they presently regulate investor-owned utilities.
5. Require all REC borrowers with non-utility business operations to perform a detailed annual audit including cost of service/cost allocation studies to avoid cross-subsidization between utility and non-utility operations.
6. Establish concise rules regarding the permissible limits of diversification for RECs.
7. The Federal Trade Commission (FTC) should be directed to investigate and issue a report on the anti-competitive practices common in REC marketing, sales, service, installation, advertising and fuel

switching efforts. Guidelines for review of anti-competitive activities of RECs should be recommended to the nation's Governors and the public service commissions in each state.

---

**Member of the National Alliance For Fair Competition**

American Supply Association  
Independent Electrical Contractors  
National Assn. of Plumbing, Heating & Cooling Contractors  
National Electrical Contractors Association  
Petroleum Marketers Assn. of America  
Sheet Metal and Air Conditioning Contractors National Assn.  
Air Conditioning Contractors of America  
New York Alliance for Fair Competition



## NATIONAL AQUACULTURE ASSOCIATION

## STATEMENT OF JOSEPH McCRAREN, EXECUTIVE DIRECTOR

Aquaculture is currently the most rapidly growing industry in agriculture. According to the U.S. Department of Agriculture's (USDA) Economic Research Service, "aquaculture in 1990 had a farm value close to \$760 million and a growth rate of 400 percent between 1980 and 1990." The industry has grown more than 15 percent annually since 1980, when its value was \$192 million.

As the industry has grown, it has provided new habitat for numerous aquatic organisms including migratory, fish-eating birds by creating new sources of food as well as resting and roosting habitat. This has contributed to increased populations of many fish-eating bird species.

The welfare of wildlife populations is a public concern. Increasing bird populations are often viewed positively by the public. However, the success of fish-eating birds has been partly at the expense of aquaculture producers. As their numbers have increased, depredations on fish have increased as well. For example, the double-crested cormorant is responsible for an estimated \$3.3 million annual loss of catfish fingerlings in Mississippi. In 1992 the U.S. trout industry reported losses of well over a half-million pounds of fingerlings valued at \$1.2 million from a variety of bird species. Adjunct concerns also include transmittal of fish disease(s) and the impact of these species on other bird populations.

In order for birds and aquaculture producers to successfully co-exist, it is necessary to develop means for reasonable management of this human-wildlife conflict.

**Needed Actions**

In order to develop and effectively implement bird-aquaculture management strategies nationwide, the following needs must be addressed:

More comprehensive information must be developed regarding bird depredation problems and solutions. This includes economic and statistical information concerning the seriousness of depredations as well as biological data for migratory bird species associated with such aquaculture losses. More comprehensive data must also be developed regarding the environmental impacts of various management methods and strategies.

New and improved management methods must be developed which are practical, effective, and environmentally safe. These methods must be economically feasible for the producer as well as acceptable to the concerned public.

Improved coordination is needed among state and federal wildlife management agencies, aquaculture producers, and the public in identifying problems, developing solutions, and implementing management actions.

A symposium jointly sponsored by the National Aquaculture Association and National Audubon Society in January of this year, focussed on the subject of managing fish-eating birds at culture facilities. The aforementioned needs and concerns reflect very well the opinions of symposium organizers and participants.

**Proposal**

The National Aquaculture Association (NAA) requests additional funding in the sum of \$1.56 million for the USDA, Animal and Plant Health Inspection Service, Animal Damage Control (ADC) program to enhance its efforts to reduce aquaculture losses

from depredating birds. At present, efforts to help aquaculture producers are hampered by a lack of an effective bird management plan coordinated among the responsible agencies and organizations.

The increased funding proposed by NAA would enable ADC to accomplish the following:

- collect and interpret data on the extent, magnitude, and chronology of depredations,
- collect and interpret data on predatory bird numbers, distribution, and migratory patterns,
- develop and implement coordinated bird management strategies in cooperation with state agencies, the U.S. Fish and Wildlife Service, and the interested public,
- develop bird depredation management methods which are effective, practical and acceptable to the producer and the public,
- serve as a central repository for, and coordinate the transfer of, technical information regarding bird depredation problems, producer needs, management technology, and environmental considerations, and
- communicate with the public on needs and benefits of responsible human-wildlife conflict management, and
- develop educational materials for aquaculturists.

## STATEMENT OF THE NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS

The National Association of Conservation Districts is pleased to present the Association's FY94 funding level recommendations for several of the agencies within the United States Department of Agriculture that have conservation programs.

Conservation districts have been coordinating and carrying out a variety of natural resource programs at the local level for more than 50 years. Many of these programs are executed in cooperation with federal and state agencies that have natural resource responsibilities. Therefore, our membership feels it is very important for us to share our federal funding recommendations for these programs.

The following general comments, observations and recommendations are offered for your consideration.

As you are aware, there are extensive efforts underway to reorganize the U.S. Department of Agriculture and many of its agencies. NACD strongly supports efforts to streamline USDA's operations, improve the efficiency of the Department and enhance the delivery of services at the field level. It is clearly in the best interest of the agriculture and conservation communities, as well as the American public, to use taxpayer dollars in the most cost-effective manner possible. However, we believe the Office of Management and Budget reorganization proposal could seriously undermine not only the basic structure of USDA, but the local partnerships that have taken more than fifty years to build. The Office of Management and Budget is proposing the concept of a "Farm Services Agency" which consolidates a number of USDA's functions and agencies. Although this concept has merit, we're concerned about the implications for conservation.

NACD feels America must have a Department of Agriculture that maintains a strong conservation and environmental focus to help farmers, ranchers and other land users meet their production goals in an environmentally responsible manner. Therefore, we feel that Congress and the Administration should work toward creating a new USDA Natural Resource Agency to administer all USDA conservation programs for nonfederal lands. We further believe that USDA production adjustment and loan programs should be administered separately from its natural resource programs, but with adequate oversight to ensure economic assistance programs are consistent with the department's conservation programs. We believe such an effort will result in increased efficiency and savings, elimination of redundancy and improved clientele service. As funding requests for these consolidation proposals come before the committee, we request your careful consideration of the impact on USDA's natural resource responsibilities.

### Soil Conservation Service

NACD appears before the committee today requesting higher funding levels for conservation programs than ever before. In the midst of massive budget and spending cuts facing the Congress, we realize that our timing could not be worse. The levels recommended, however, are representative of those needed to meet various Congressional mandates. Conservation districts have been diligently striving to assist by devoting large amounts of local human and fiscal resources to fill this void of needed assistance. SCS has entered into memoranda of understanding with nearly 3,000 local conservation districts to provide assistance needed in addressing local conservation priorities. Each year local districts divert more resources away from local priorities to address federal mandates.

Our biggest challenge today remains meeting the resource planning and technical assistance requests from farmers and other landusers. Several federal programs require SCS to provide landusers with the conservation planning and technical assistance on croplands, range and pasture lands, surface-mined land, urban erosion and sediment problems, and others. However, no programs demand more staff attention than implementation of the 1985 and 1990 Farm Bills.

The "conservation compliance" provisions of the 1985 and 1990 Farm Bills have created a workload that none of us could have imagined. As farmers continue to implement conservation plans as required to remain eligible for various USDA programs, the workload continues to increase dramatically. The result has been severe staff shortages and the inability of the agency to meet its obligation under federal law, to both landowners and conservation districts.

Although the workload generated by the 1985 and 1990 Farm Bills remains the greatest challenge, it is imperative to remember the other responsibilities of the conservation delivery system focused around the Clean Water Act, Endangered Species Act, Coastal Zone Management Act as well as state erosion control laws.

The following illustrates the current workload need:

- \* 60 million acres of conservation compliance plans must be applied, and an additional 80 million acres of maintenance requiring 5,000 staff years per year, over the next five years. Another 500 staff years are needed to conduct status reviews on conservation compliance plans to ensure they are being implemented.

- \* 300 staff years are needed to service the 90 water quality hydrologic unit area initiatives (HUA) and demonstration projects in progress; 90 additional HUAs requiring another 300 staff years are needed to remain on schedule with USDA's water quality initiatives.

- \* 2.5 million acres must be brought into the Conservation Reserve Program by the end of 1995 to meet the goal of the 1985 Farm Bill. More than 750 staff years of technical assistance will be needed to develop conservation plans for these lands.

- \* 1 million acres of wetlands must be restored over the next three years -- 1,500 staff years will be required to complete the restoration.

NACD urges the subcommittee to reexamine current funding levels for the Soil Conservation Service relative to the workload mandated by law, and by obligations to state and local conservation district programs. NACD believes that a total appropriation of \$1,464.1 million is needed for SCS to adequately cover program needs. NACD specifically recommends an increase in conservation operations to \$914.7 million, including a \$265 million increase for conservation technical assistance. This would fund 6,000 needed staff positions to service the field office workload at the local level. Of this amount, NACD requests that \$50 million be directly allocated to conservation districts to help offset costs in implementing federal conservation programs and ongoing conservation initiatives at the local level.

For watershed planning and operations, NACD recommends \$15 million for planning and \$345 million for operations. A number of our existing structures are in need of repair. This level would provide the agency funds to preform needed repairs to ensure proper water management and flood control structures. To support new Resource Conservation and Development areas, NACD recommends funding at \$50 million. NACD also recommends full funding of the Great Plains Conservation Program at \$40 million. To address the increasing need for conservation assistance for the nation's grazing lands, NACD is requesting that a new, line-item be created within the agency's budget to promote grazing lands conservation. Additional recommendations are contained in our line item recommendation chart.

#### AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE

Within the ASCS there are programs which are vital to our federal conservation effort. NACD recommends the following appropriations:

- \* \$2,130 billion for the Conservation Reserve Program to fund 39.6 million acres for FY94 (includes \$1,830 billion for existing contracts, \$50 million for 1994 contracts, and \$50 million for 1994 cost-share payments).

- \* \$290.2 million for the Wetland Reserve Program to support 50,000 acres under existing contracts, plus a 350,000 sign-up FY94.
- \* \$275 million for the Agricultural Conservation Program (includes \$225 million for ongoing ACP, and \$50 million earmarked for the Water Quality Incentives Program).

Attached to our testimony are line item recommendations for select programs within the Department of Agriculture. We appreciate the opportunity to convey our recommendations to you on these very important areas.

**NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS  
FISCAL YEAR 1994 FEDERAL FUNDING RESOLUTION**

	FY93 ADMINISTRATION PROPOSAL	FY93 NACO RECOMMENDED	FY93 ENACTED	FY94 NACO RECOMMENDED
(in millions of dollars)				
<b><u>SOIL CONSERVATION SERVICE</u></b>				
Conservation Operations				
Conservation Technical Asst.	486.2	742.8	490.2	755.2 (1)
Soil Surveys	72.5	75.0	72.6	75.0
Snow Surveys & Water Forecasting	5.7	6.0	5.7	6.0
Plant Material Centers	8.1	8.5	8.0	8.5
Grazing Lands Conservation				20.0 (2)
Stewardship Plans				50.0 (3)
(CO Subtotal)	572.5	832.2	576.5	914.7
River Basins	10.1	13.2	13.2	30.0
Watershed Planning	6.4	15.0	9.5	15.0 (4)
Watershed Operations	152.9	250.0	228.3	345.0 (5)
Wetland Acquisition				10.0 (6)
Project Rehabilitation				60.0 (7)
RC&D's	23.6	50.0	32.5	50.0 (8)
Great Plains	25.3	40.0	25.2	40.0 (9)
TOTAL SCS	791.4*	1200.5	885.4*	1464.7

(\*Totals are approximate due to rounding)

**AGRICULTURAL STABILIZATION AND**

**CONSERVATION SERVICE**

Agricultural Resources Conservation Program (ARC)

Conservation Reserve	1,798.6	1,880.0	1,578.5	2,130.0 (10)
Wetlands Reserve	160.9	50.0	0	290.2 (11)
Agricultural Conservation Program	125.0	275.0	194.4	275.0 (12)
Forestry Incentives Program	12.4	25.0	12.4	25.0
Water Bank	11.4	20.0	18.6	20.0
Colorado River Salinity Control Program	14.8	15.0	13.8	15.0

**AGRICULTURAL RESEARCH SERVICE**

Soil & Water Conservation Research	82.9	98.5	81.9	98.5 (13)
SIEEP II Research		0.5	0.6	0.6 (14)

**COOPERATIVE STATE RESEARCH SERVICE**

Hatch Act (grants to states)	168.3	175.0	168.8	175.0
McIntire-Stennis (forestry)	15.8	20.0	18.5	20.0
Rangeland Research	0	1.0	0.5	1.0
Sustainable Agriculture Research & Education (SARE)	4.5	15.0	6.7	15.0
National Research Initiative	150.0	200.0	97.5	200.0 (15)

**COOPERATIVE EXTENSION SERVICE**

General Formula Funds	262.7	275.0	262.7	275.0
Earmarked Programs				
Water Quality	13.5	16.0	11.4	16.0
Pesticide Impact Assessments	3.6	4.0	3.4	4.0
Pesticide Applicator Training	0	10.0	0	10.0 (16)
Integrated Pest Management	10.0	12.0	8.2	12.0
1990 Farm Bill	0	50.0	0	50.0 (17)
Renewable Resources Extension Act	0	15.0	2.8	15.0

**FARMER'S HOME ADMINISTRATION**

Rural Community Fire Protection	0	7.0	3.5	7.0
Soil & Water Loans-Direct	0	14.0	2.3	14.0
Soil & Water Loans-Guaranteed	0	2.0	1.4	2.0
Watershed Protection & Flood Prevention	0	8.0	4.0	8.0
RC&D Loans	0	1.2	0.6	1.2



## FY94 NACD FEDERAL FUNDING RESOLUTION - EXPLANATORY NOTES

- (1) CONSERVATION TECHNICAL ASSISTANCE (755.2 m) = FY93 appropriations (490.2 m) + inflation factor (25 m) plus 6000 new staff positions (240 m) to service field office workload. Of this amount (50.0 m) should be allocated directly to conservation districts to offset costs to implement federal conservation programs and support ongoing conservation initiatives at the local level. NACD's highest funding priority is adequate funding for Conservation Technical Assistance.
- (2) GRAZING LANDS CONSERVATION (20 m) = Reflects NACD policy supporting new line item for grazing land technical assistance.
- (3) STEWARDSHIP PLANS (50 m) = Establishes new line item to be transferred from SCS to districts under cooperative agreements to provide complete conservation plans for landowners which utilize land and associated resources based on capability.
- (4) WATERSHED PLANNING (15 m) = Amount needed to service current applications and contracts for water quality planning work in priority watersheds.
- (5) WATERSHED OPERATIONS (345 m) = Amount needed to maintain program, service backlog of projects ready for construction and implement new initiatives. PL-566 Projects: 250 m; PL-534 Projects: 75 m; Emergency Watershed Protection: 20 m.
- (6) WETLAND ACQUISITION (10 m) = Using the authority granted to PL-566, districts will help local sponsors acquire wetland or floodplain easements to retain excessive floodwaters, improve water quality and provide habitat for fish and wildlife.
- (7) PROJECT REHABILITATION (60 m) = Additional special funding provided to assist watershed project sponsors with rehabilitation of structural measures that are reaching the end of their design life.
- (8) RC&D'S (50 m) = Increased funds to be used to support new RC&D areas and rural development in low income areas.
- (9) GREAT PLAINS (40 m) = Amount authorized under the 1990 Farm Bill.
- (10) CRP (2,130 m) = Amount needed to fund a 39.6 million acre reserve in FY94.
 

- Existing contracts	36.6 million acres @ \$50/acre	1,830 m
- 1994 contracts	3 million acres @ \$50/acre	150 m
- 1994 cost share payments	3 million acres @ \$50/acre	150 m

Approx. 65 million expected in carryover funds.
- (11) WETLANDS RESERVE (290.2 m) = Funds required to support 50,000 acres under existing contracts plus a 350,000 signup in FY94.
- (12) AGRICULTURAL CONSERVATION PROGRAM (275.0 m) = (225 m) for ongoing ACP + (50.0 m) earmarked for Water Quality Incentives Project.
- (13) SOIL AND WATER CONSERVATION RESEARCH (98.5 m) = Increased funds to be used to improve wind and water erosion prediction and control technologies; to improve the conservation and efficient use of water; and to develop environmentally compatible management support systems for rangelands.
- (14) STEEP II (0.6 m) = Research addressing problems associated with the lack of erosion control technology. Program has not previously been a line item appropriation. NACD supports a line item for STEEP II within the ARS appropriation.
- (15) NATIONAL RESEARCH INITIATIVE (200.0 m) = Funding for USDA sponsored research in the following areas: natural resources & environment, food quality, rural revitalization, and plant and animal systems.
- (16) PESTICIDE APPLICATOR TRAINING (10 m) = Direct appropriation to fund Extension's pesticide application training program. In previous years, Extension has received a limited amount of pass through funds from EPA to support this program.
- (17) 1990 FARM BILL (50 m) = Funds to be used to support the following new provisions authorized under the 1990 Farm Bill:
  - Conservation title implementation -- (10 m)
  - Best Utilization of Biological Applications (BUBA) section 1621 -- (10 m)
  - Integrated Management Systems (section 1627) -- (10 m)
  - Sustainable Agriculture Technology Development and Transfer (section 1629) -- (10 m)
  - Rural Development (section 2346) -- (10 m)

## STATEMENT OF THE NATIONAL ASSOCIATION OF HOME BUILDERS

Mr. Chairman and Members of the Subcommittee:

The National Association of Home Builders, which represents 164,000 member firms, is very appreciative for the opportunity to submit written testimony on Farmers Home Administration (FmHA) rural housing programs.

This statement will emphasize the dire need for affordable housing which exists in rural America today. Unless action is taken, this need will not only continue to exist, but will most likely deepen.

### SEVERE NEED FOR AFFORDABLE RURAL HOUSING PROGRAMS

According to the American Housing Survey conducted in 1991, 22 percent of all households reside in nonmetropolitan areas. Although that percent will fall somewhat as a result of the reclassification of metropolitan areas following the 1990 census, the housing conditions in rural areas will continue to affect a significant share of Americans.

Housing conditions in nonmetropolitan areas are generally worse than those in metropolitan areas. By the Department of Housing and Urban Development's definition, a larger share of the occupied housing stock in nonmetropolitan than metropolitan areas is inadequate. About 10.4 percent of the occupied units in nonmetropolitan areas are classified as inadequate compared with 7.2 percent in metropolitan areas. This equates to 2.1 million rural households living in substandard housing.

Although home ownership rates are higher in nonmetropolitan areas, (73 percent versus 62 percent in metropolitan areas), the availability of mortgage credit is a much more significant problem in these areas. The dispersion of the population in nonmetropolitan areas makes it difficult for lenders to achieve the economies of scale necessary to maintain a mortgage loan department. In addition, the special nature of rural properties and rural home buyers often make it difficult for them to conform to secondary mortgage market underwriting standards. Without a strong secondary market outlet for loans, fewer banks are willing to originate mortgage loans. Hence, a much larger share of buyers in nonmetropolitan areas turn to unconventional sources for financing, often resorting to "bullet loans" that must be repaid in full after a short term. This shortage is exacerbated by the fact that there is a lack of federal mortgage insurance in rural areas. The share of mortgage holders in metropolitan areas that have Federal Housing Administration or Veterans Affairs Department financing is twice as great as the share of mortgage holders in nonmetropolitan areas who do.

Farmers Home Administration assistance is vital to the production of affordable rural housing for low-income rural home buyers and renters. The FmHA Section 502 direct loan and Section 515 rural rental housing loan programs produce nearly 30,000 units per year. This has accounted for more than 10 percent of nonmetropolitan starts for the past several years.

The demand for the FmHA housing programs runs far ahead of supply. Since 1978, the number of new units assisted by these programs has been slashed by 70 percent. The Section 502, Section 515 and Section 521 programs are all oversubscribed. At the close of fiscal year 1992, there were almost 67,000 single family housing loan applications on hand at FmHA. Preapplications for rental units totalling \$1.6 billion have been received by FmHA. In fiscal year 1992, funds were

only available for one-third of the 133,000 eligible Section 515 applications. In addition, fiscal year 1993 funding for the Section 502 unsubsidized guaranteed loan program was depleted by April, 1993. Scores of partially processed applications throughout the country were halted and are currently awaiting renewed funding.

The Farmers Home Administration is a lender of last resort. In order to participate, FmHA borrowers must document that they were unable to qualify for conventional loans. In 1991, 4.1 million nonmetropolitan households paid more than 30% of their income for housing. Of those, 1.6 million paid more than 50%. That same year 18.7 percent of nonmetropolitan households had incomes below the poverty rate. This compares to 12.6 percent of metropolitan households living below the poverty line. Without FmHA housing programs, even more rural households would remain highly overburdened.

### RURAL HOUSING AS ECONOMIC STIMULUS

Rural housing programs of the Farmers Home Administration not only have a strong track record of successfully providing housing to Americans unable to obtain assistance from any other source, but provide an economic stimulus which affects our entire nation's economy.

Housing starts in nonmetropolitan areas are a significant component of residential fixed investment each year. Nonmetropolitan starts since 1970 have accounted for between 14 and 34 percent of starts annually.

In fiscal year 1992, the Section 502 direct loan program produced 12,888 new homes, created 22,670 new jobs, generated \$647 million in wages and had a total tax impact on federal, state and local government of \$265.5 million. That same year, the Section 515 program produced 14,664 units, created 12,112 new jobs, generated \$346.1 million in wages and provided federal, state and local governments with \$156.9 million in tax revenues.

The National Association of Home Builders has adopted formal policy supporting President Clinton's broad-based goals to: provide incentives to create jobs and stimulate the economy; eliminate the credit crunch; encourage long-term investment in the future of America and its people; and reduce the annual federal deficit by half over the next four years.

We are gratified that the President's economic plan recognizes the rural housing industry as a vital economic contributor to our economy. President Clinton proposed fiscal year 1993 supplemental funding of \$235 million for the Section 502 unsubsidized guaranteed loan program and \$9 million for the Section 504 low-income housing repair loan/grant program in his economic stimulus bill. Although that bill was not passed by Congress, the House of Representatives recently included \$250 million in additional fiscal year 1993 funding for the Section 502 guaranteed loan program in its supplemental appropriations bill (H.R. 2118). NAHB strongly supports this increase and respectfully urges that the Senate Appropriations Committee support such an increase in its supplemental funding bill.

The Administration's proposed fiscal year 1994 budget for the Department of Agriculture suggests increased funding of approximately \$600 million for the Section 502 direct loan program and approximately \$350 million for the Section 502 guaranteed loan program. NAHB has shown a strong commitment to the Section 502 guaranteed loan program since its inception. However, the direct and guaranteed loan programs serve separate and distinct populations, and neither one can serve to duplicate the efforts of the other.

In addition, the Clinton plan would provide a total of \$150 million in additional rental assistance in fiscal year 1994. This would include \$75 million for vouchers and \$75 million for Section 521 rental assistance. Certainly, increased funding of the Section 521 rental assistance program is needed to insure the viability of Section 515 projects. However, NAHB believes that vouchers can not serve as a substitute for new production and can not be successful unless there is an adequate supply of rental housing units on the market. If a voucher program is created, we would strongly urge it to be project based, rather than tenant based.

NAHB heartily endorses these proposed funding level increases, which will have a ripple effect felt in all geographic areas of the country. We estimate that a \$600 million spending increase for the Section 502 direct loan program would generate about 12,000 jobs, \$346.8 million in wages, and \$142.8 million in federal, state and local taxes.

Although the President's economic plan does not propose an increase to the Section 515 rural rental housing loans program, we remain hopeful that the economic stimulus which the program provides will be taken into account. NAHB strongly supports increased funding of the Section 502, Section 504, Section 515 and Section 521 programs.

#### **POTENTIAL REORGANIZATION OF THE DEPARTMENT OF AGRICULTURE**

Without an adequate delivery system, even well funded rural housing programs may not be effective. The National Association of Home Builders has steadfastly stressed its concerns about the future of the Farmers Home Administration.

Housing is a vital component of the rural economy, and therefore should be a major factor in any proposed rural economic development plan. A lack of available affordable housing, and its associated infrastructure, seriously constrains any future economic expansion of our nation's rural areas.

NAHB strongly urges you to continue to protect existing FmHA rural housing programs. We support necessary efforts to streamline and consolidate the Department of Agriculture in order to reduce the federal budget deficit and provide a higher level of efficiency and service to the American taxpayer. However, we want to insure that changes are not made which would lead to a lower level of service. NAHB strongly supports the Farmers Home Administration's existing county, district and state office structure, and respectfully urges that the housing staff levels necessary to effectively operate those offices be maintained. A depletion of FmHA housing staff is a serious threat to the future effectiveness of rural housing programs.

It remains unclear how the Administration's proposal to consolidate farm related offices into a new Farm Services Agency would affect FmHA rural housing programs. The National Association of Home Builders has established an internal task force to ensure that the laudable goal of departmental streamlining does not impede the equally important goal of efficiently providing affordable housing. We look forward to providing a detailed analysis on this issue as departmental reorganization plans are formally proposed.

#### **CONCLUSION**

In conclusion, I would like to thank Chairman Bumpers and Members of the Subcommittee for their continued support of homeownership and rental opportunities for low- and moderate-income rural Americans. I look forward to continuing to work with your Subcommittee in the production of affordable housing.

## NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

### STATEMENT OF DR. RAYMOND J. MILLER, CHAIR, FISCAL YEAR 1994 COMMITTEE

#### INTRODUCTION

Mr. Chairman and members of the Subcommittee, I am Raymond J. Miller, President of the Maryland Institute for Agriculture and Natural Resources, University of Maryland System, Adelphi. I am presently serving as chair of the FY 1994 Budget Committee of the Board on Agriculture, NASULGC. The opportunity to include my full statement in the hearing record is very much appreciated.

Thanks in large part to America's public investment in education, research, and extension our agriculture is one of this nation's greatest success stories. The return on that investment has been remarkable.

Output has doubled since 1950 while conventional inputs have declined.

Our agriculture now earns foreign exchange utilizing only 2% of the nation's resources while supplying 12% of the nation's exports.

In 1990 U.S. consumers saved approximately \$196 billion, because they paid 2.3 times less for food and fiber than they might have if technology had halted at 1950 levels.

Each \$1 invested in agricultural extension, research, and education returned \$10 over the typical 16-year life of that technology.

The social changes accrued by the American public are no less important. Cooperative Extension nutrition education has assisted thousands of low income families to improve their diet and health thereby saving millions of dollars in health care.

4-H is the largest youth-serving nonformal educational program in the nation reaching 5.5 million young people across the nation--rural, small town, suburban, and urban settings--and across all races, ethnicities and economic status.

American agriculture's protection of our environment and natural resources is no less important. Agricultural technology has reduced by 393 million acres the prime farmland required to meet the nation's needs for food production.

And technology along with improved farming practices have also reduced soil erosion by a factor of six over erosion rates of the 1930s.

But the important point that must be made is that if we fail to maintain our current pace of producing new technology, erosion and urbanization will outpace agricultural productivity and depreciate rural well-being in a very short time.

#### CONTINUING THE SUCCESS

Of course, it would be tempting to leave research, development and technology transfer to the private sector. However, we would be unwise to rely on such a plan. Numerous agricultural technologies have high social and environmental payoffs but low returns for private firms making these technologies unattractive to the private sector. In addition to new technology, much of the investment in agricultural research is utilized for the development of human resources, a most essential activity that private industry is not prepared to conduct.



It seems clear then that in order to continue the important task of maintaining American agricultural superiority to insure affordable safe food, a stable environment and rural social economic improvement, we will have to rely on public investment in science and education.

Although agricultural productivity continues to grow, it is growing at a slower pace. If productivity continues to slow, real food prices will soon rise. As an example, it is estimated that approximately twenty significant technological developments would need to be developed and adopted in the 1990s simply to maintain productivity gains at the 1990 rate. All of this underscores the need for continued investments in public and private research, extension and education efforts with the public sector, especially prominent in providing basic and other "public good" research along with technology transfer and education. In this manner we can ensure continued productivity of one of the nation's greatest success stories, and in so doing protect the standard of living and social well-being of future generations of Americans.

## **FY 94 BUDGET PRIORITIES**

This is the rationale behind the FY 1994 NASULGC budget priorities for agricultural research extension and higher education. These priorities were identified through a process of nationwide consultation within the land-grant community and mirror the national priorities established by the Joint Council on Food and Agricultural Sciences.

The two over-arching priorities that define our FY 1994 budget recommendations are:

### **1. Strengthen Base Programs for Research, Extension and Higher Education**

Base funds for research are appropriated under Hatch, McIntire-Stennis, Evans Allen and Animal Health legislation; extension base funds are appropriated under Smith-Lever 3b and 3c, D.C. Extension and 1890 Colleges and Tuskegee Extension Acts. The Morrill-Nelson Act provides base funds for higher education.

These funds provide for the essential continuing support of the infrastructure within which long- and short-term projects and programs can be conducted efficiently. Specifically, base funds:

- Assure that a stable resource base of personnel and facilities is in place in every state and territory to anticipate and deal with short- and long-term societal concerns.
- Provide for the flexibility needed to respond to changing needs and priorities.
- Provide initial capacity to focus on contemporary priority issues on the national agenda.
- Undergird a system for the continuing education of youth and adults and for the delivery of knowledge and technology to consumers.
- Provide networking capabilities to enhance communications nationwide and within regions.
- Provide highly cost-effective leveraging of significant state, county and private-sector support.

Erosion of base funds over more than a decade has impaired the ability of the system to meet critical state and national research and extension needs. Major redirection of these funds to focus on contemporary issues already has occurred at most land-grant universities. Many universities have been forced to reduce their faculty and extension staff at a time when the needs for science-based research and extension have escalated dramatically. Reversal of this erosion in base funding is essential to maintain the basic infrastructure for research and extension.

An increase of 5.0 percent in base funds for research, extension, and education is needed to offset anticipated inflation in Fiscal Year 1994 and to help rebuild capacity after nearly a 20 percent decline in real funding levels since 1980.

## **2. Advance Special Initiatives in Support of the Food, Agriculture and Environmental System**

Major public investments are needed to assure the continuation of a dynamic food, agriculture, and environmental system of research, extension and instruction which anticipates information needs on a global scale while maintaining a sound base from which to respond.

Assessing need and changing focus requires special research and extension initiatives such as the National Research Initiative and programs on water quality, youth at risk, food safety and sustainable agriculture. Base funding sustains the infrastructure of information, expertise and facilities from which new initiatives emanate, but each requires funding to advance a competitive U.S. agriculture, food and environmental system.

These initiatives are undertaken through individually-funded programs which address priorities for FY 1994 as established by the Joint Council on Food and Agricultural Sciences. These five important national priorities are:

- 1) Attain sustainable agricultural systems that are compatible with environmental and social values.
- 2) Develop scientific and professional expertise to advance new technologies.
- 3) Address critical social issues in a changing society.
- 4) Enhance the global competitiveness of U.S. agriculture.
- 5) Provide a safe, affordable and nutritious food supply.

Several key new initiatives that address these important national priorities are the Institutional Challenge Grant Program for Higher Education, the National Research Initiative, the International Agricultural Program Initiative, Youth and Families at Risk, and the 1890 Capacity Building Program. Initiatives of this type complement base programs which undergird the infrastructure of the research, extension, and teaching programs of the land-grant system. And this system complements and accentuates the effectiveness of the overall science and education effort of the USDA.

## **CONCLUSION**

Distinguished citizens representing all phases of the land-grant system have labored diligently to prepare what we feel is a reasonable yet effective budget for FY 1994. This budget addresses critical national priorities and provides solutions to important problems in agricultural production, environmental and natural resource stewardship, and rural social and economic welfare.

We appreciate the opportunity to present this budget and its rationale and trust that you will consider favorably our suggestions.

## **OTHER ITEMS FOR THE RECORD**

Mr. Chairman, I respectfully request that you accept two additional items for the record:

1. A statement by NASULGC President C. Peter Magrath concerning agricultural research facilities. Dr. Magrath's remarks will follow this statement.
2. Our Science and Education budget recommendations for FY 1994 which are attached to my statement.

I hope that you will agree to this request.

TABLE 1  
SUMMARY OF FUNDING RECOMMENDATIONS  
FOR RESEARCH, EXTENSION, HIGHER EDUCATION  
AND INTERNATIONAL AGRICULTURE  
(In Thousands of Dollars)

	FY93 APPROPS	FY94 PRESIDENT REQUEST	FY94 NASULGC RECOMMENDATION
<b>BASE PROGRAM</b>			
Research	220,269	229,653	239,867
Extension	288,452	298,802	304,907
Higher Education	2,850	2,850	2,850
<b>TOTAL</b>	<b>511,571</b>	<b>531,305</b>	<b>547,624</b>
<b>SPECIAL PROGRAMS</b>			
<i>Research</i>			
NRI	97,500	130,195	130,195
Special Grants	26,775	34,418	46,468
Special Problem Grants	46,636	0	0
Other Research Grants	13,168	14,511	20,111
International Research	0	0	2,000
<b>TOTAL</b>	<b>184,079</b>	<b>179,124</b>	<b>198,774</b>
<i>Extension</i>			
National Priorities	22,875	28,375	43,875
Specified Programs	104,138	98,443	110,819
International Extension	0	0	625
<b>TOTAL</b>	<b>127,013</b>	<b>126,818</b>	<b>155,319</b>
<i>Higher Education</i>			
National Needs Grants	15,250	17,639	20,597
International Education	0	0	500
<b>TOTAL</b>	<b>15,250</b>	<b>17,639</b>	<b>21,097</b>
<b>FEDERAL ADMINISTRATION</b>			
Net Research	10,545	2,141	2,141
Net Extension	9,283	5,644	5,644
<b>TOTAL NET</b>	<b>19,828</b>	<b>7,785</b>	<b>7,785</b>
<b>SUMMARY</b>			
Total Research	414,893	410,918	440,782
Total Extension	424,928	431,264	465,870
Total Higher Education	18,100	20,489	23,947
<b>GRAND TOTAL</b>	<b>857,741</b>	<b>862,671</b>	<b>930,599</b>

TABLE 2  
RESEARCH FUNDS  
(In Thousands of Dollars)

	FY93 APPROPS	FY94 PRESIDENT REQUEST	FY94 NASULGC RECOMMENDATION
<b>BASE PROGRAMS</b>			
Hatch Act	168,785	173,451	177,224
McIntire-Stennis	18,533	28,045	28,045
Evans-Allen (1890)	27,400	28,157	28,770
Animal Health	5,551	0	5,828
<b>TOTAL BASE PROGRAMS</b>			
<b>RESEARCH</b>	<b>220,269</b>	<b>229,653</b>	<b>239,867</b>

**RESEARCH GRANTS--PL 89-106****Competitive Grants (sec. 2b)(NR1)**

Plant Systems	40,000	45,195	45,195
Animal Systems	25,000	30,000	30,000
Nutrition, Food Quality and Health	6,500	13,000	13,000
Natural Resources and Environment	18,000	26,000	26,000
Engineering Processes and Value-Added	4,000	9,000	9,000
Rural Development, Markets, and Trade	4,000	7,000	7,000
<b>SUBTOTAL COMPETITIVE GRANTS</b>	<b>97,500</b>	<b>130,195</b>	<b>130,195</b>

**Special Research Grants (sec. 2c)***National Programs*

Animal Health	0	0	3,000
Animal Well-Being	--	0	3,000
Energy Biomass/Biofuels	--	1,000	1,000

*Pest Control Strategies*

Integrated Pest Management	4,457	7,000	7,000
Pesticide Clearance	3,500	10,000	10,000
Pesticide Impact Assessment	2,968	2,968	2,968
Minor Use Animal Drugs	464	650	650
Biological Impact Assessment	300	300	300
Rural Development Centers	500	500	550
Tropical and Subtropical Ag	3,320	0	0
Water Quality	8,950	9,000	9,000
Global Change	2,000	3,000	3,000
Solid Waste Management	--	--	3,000
Strengthening the Rural Workforce	--	--	3,000

**SUBTOTAL NATIONAL**

<b>SPECIAL GRANTS</b>	<b>26,459</b>	<b>34,418</b>	<b>46,468</b>
-----------------------	---------------	---------------	---------------

**SUBTOTAL REGIONAL/STATE**

<b>SPECIAL GRANTS</b>	<b>46,952</b>	<b>0</b>	<b>0</b>
-----------------------	---------------	----------	----------

<b>TOTAL SPECIAL GRANTS</b>	<b>73,411</b>	<b>34,418</b>	<b>46,468</b>
-----------------------------	---------------	---------------	---------------

**GRAND TOTAL**

<b>RESEARCH GRANTS</b>	<b>170,911</b>	<b>164,613</b>	<b>176,663</b>
------------------------	----------------	----------------	----------------

**OTHER RESEARCH PROGRAMS**

Rangeland	475	489	1,000
Aquaculture Centers	4,000	4,111	4,111
Supplemental and Alternative Crops	1,168	3,000	3,000
Sustainable Agriculture	6,725	6,911	10,000
1890 Institution Centers of Excellence	--	--	2,000
Weather Information Systems	400	0	0
Critical Materials	400	0	0

**TOTAL OTHER**

<b>RESEARCH PROGRAMS</b>	<b>13,168</b>	<b>14,511</b>	<b>20,111</b>
--------------------------	---------------	---------------	---------------

**FEDERAL ADMINISTRATION**

Direct	20,795	13,641	13,641
1890 Capacity Building Grants	(10,250)	(11,500)	(11,500)

**NET FEDERAL**

<b>ADMINISTRATION</b>	<b>10,545</b>	<b>2,141</b>	<b>2,141</b>
-----------------------	---------------	--------------	--------------

**INTERNATIONAL RESEARCH**

	--	--	2,000
--	----	----	-------

<b>GRAND TOTAL RESEARCH</b>	<b>414,893</b>	<b>410,918</b>	<b>440,782</b>
-----------------------------	----------------	----------------	----------------

**TABLE 3**  
**EXTENSION FUNDS**  
(In Thousands of Dollars)

	FY93 APPROPS	FY94 PRESIDENT REQUEST	FY94 NASULGC RECOMMENDATION
<b>BASE PROGRAMS</b>			
Smith-Lever	262,712	270,000	275,847
D.C. Extension	1,010	1,038	1,060
1890 Colleges and Tuskegee	24,730	27,764	28,000
<b>TOTAL BASE PROGRAMS</b>			
<b>EXTENSION</b>	288,452	298,802	304,907
<b>NATIONAL EXTENSION PRIORITIES</b>			
Water Quality	11,375	11,375	11,375
Food Safety and Quality	1,500	2,000	3,000
Rural Economic Development	--	--	2,000
Sustainable Ag Systems	--	3,000	10,000
Youth and Families at Risk	10,000	12,000	12,000
Solid Waste Management	--	--	3,000
International Extension	--	--	625
1890 Special Targeted Programs			
Teen Pregnancy/Health	--	--	750
Alternative Ag/Small-Scale Farmers	--	--	750
Rural Economic Development/Leadership	--	--	250
Family/Child Prenatal to Five	--	--	750
<b>TOTAL NATIONAL EXTENSION PRIORITIES</b>	22,875	28,375	44,500
<b>SPECIFIED PROGRAMS</b>			
EFNEP	60,525	62,201	63,551
Rural Development Centers	950	950	1,045
Integrated Pest Management	8,200	8,565	10,000
Pesticide Impact Assessment	3,405	3,405	3,700
Urban Gardening	3,557	0	3,557
Rural Health and Farm Safety	2,720	1,000	2,720
Reservation Extension Agents	1,750	0	2,000
1890 Extension and Research Facilities	8,000	8,000	8,000
Renewable Resources Extension Act	2,765	3,841	3,841
Pacific Rim Program	647	0	647
Crop Simulation	498	0	498
Farmer Assistance Grants	2,550	0	0
Ag Telecommunications	1,221	1,221	2,000
Rural Health and Safety Education	2,000	2,000	2,000
Assistance for Disadvantaged			
Farmers/Ranchers	1,000	0	0
Nutrition Education	3,530	7,060	7,060
Rural Technology Grants	1,000	0	0
New Uses for Farm and Forestry			
Products	--	200	200
<b>TOTAL SPECIFIED PROGRAMS</b>	104,318	98,443	110,819
<b>FEDERAL ADMINISTRATION</b>			
Direct	10,428	5,644	5,644
Pacific Rim Program	(647)	0	See Above
Crop Simulation	(498)	0	See Above
<b>NET FEDERAL ADMINISTRATION</b>	9,283	5,644	5,644
<b>GRAND TOTAL EXTENSION</b>	424,928	431,264	465,870



**TABLE 4**  
**HIGHER EDUCATION FUNDS**  
(In Thousands of Dollars)

	FY93 APPROPS	FY94 PRESIDENT REQUEST	FY94 NASULGC RECOMMENDATION
<b>BASE PROGRAMS</b>			
Morrill-Nelson	2,850	2,850	2,850
<b>TOTAL BASE PROGRAMS</b>			
<b>HIGHER EDUCATION</b>	<b>2,850</b>	<b>2,850</b>	<b>2,850</b>
<b>NATIONAL NEEDS COMPETITIVE GRANTS</b>			
Graduate Training Fellowships	3,500	3,597	3,597
Minority Scholars Program	--	1,000	1,000
Institution Challenge Grants	1,500	1,542	4,000
1890 Capacity Building Grants	10,250	11,500	11,500
Telecommunications	--	--	500
<b>TOTAL NEEDS GRANTS</b>	<b>15,250</b>	<b>17,639</b>	<b>20,597</b>
<b>INTERNATIONAL HIGHER EDUCATION</b>	<b>--</b>	<b>--</b>	<b>500</b>
<b>GRAND TOTAL HIGHER EDUCATION</b>	<b>18,100</b>	<b>20,489</b>	<b>23,947</b>

#### STATEMENT OF DR. C. PETER MAGRATH, PRESIDENT

Mr. Chairman, distinguished members of the subcommittee, I am C. Peter Magrath, President of the National Association of State Universities and Land-Grant Colleges (NASULGC). I am pleased to present this statement for the record today to emphasize once more the critical national problem of the erosion suffered by our national agricultural research infrastructure due to funding neglect over the past two decades.

Modern agriculture is science-based. Just as our current capacity to produce rests on knowledge developed in the past, the ability of American agriculture to meet the future challenges of nature and global markets will depend on the quality, quantity, and availability of new research knowledge. And, just as current knowledge and technology were achieved through prior agricultural science and education investments, the future knowledge will depend on the investments we make now and in the near future. These investments include support for ongoing and future agricultural research program, the training of talented agricultural scientists for the future, and in the research tools -- laboratories, and equipment needed by agricultural scientists to conduct quality and relevant research.

Unfortunately, every analysis of the national effort in agricultural science and education concludes that we are underinvesting in all three areas of education, research and extension. Here, I will focus on the special problem of research infrastructure -- the buildings, facilities, and equipment that are requisite for quality research. Clearly, the condition and capacity of the national research infrastructure is a major factor both in the efficiency and effectiveness of the research program and in recruiting quality graduate students. Further, major investments are needed now to assure future research capacity as well as to secure a strong and vital education effort for the future.

Both the condition and capacity of our agricultural research infrastructure are in need of immediate attention. The general underinvestment in agricultural research for the past two decades has forced research administrators at federal facilities and at cooperating state universities to use their scarce resources to maintain research programs at the expense of the research infrastructure. Nearly every agricultural research facility in the nation has a backlog of needed facility renovations and new research facility construction projects that they have had to defer.

In order to address this growing problem, many universities have resorted to individual funding initiatives with Congress. A sharp increase in such activities has occurred over the past several years. Almost all of these projects are reasonable investments when considered in isolation; however, the process can be depicted as a "bandaid" that does not adequately address the need for an effective national agricultural research infrastructure.

Two years ago our association (NASULGC) endorsed a proposed plan for needed investments in agricultural research facilities which was formulated by a special USDA/NASULGC committee of distinguished scholars. The plan aims specifically at establishing a competitive grants program under authority of the Research Facilities Act of 1963 as amended, and calls for a collaborative priority-setting effort involving NASULGC, the USDA, and the Congress. I am pleased to commend that proposal to you, not only as an alternative approach to projects involving site-specific congressional initiatives but also as a process for setting up a national plan based on established priorities. The text of the proposal follows:

### "RESEARCH FACILITIES PROGRAM -- A PROPOSAL

It is proposed that Congress establish a competitive facility grants program under the authority of the Research Facilities Act of 1963, as amended. The program should have two major components:

- I. Competitive facility grants open to all eligible cooperating institutions. The larger component of the program would be allocated 80% of the available funds.
- II. Competitive facility grants for smaller or emerging cooperating institutions. This component would be allocated 20% of the available funds. Institutions within this program would only compete with similar institutions; however, the procedures and other requirements would be the same as for the above component.

The total program should be a coordinated federal/state effort with an open, competitive selection process that will embody the following principles:

- The program should include a system for establishing priority research areas and issues.
- Solicitation of grant proposals should provide equal opportunity for all eligible and qualified institutions.
- Selection should be on a competitive, merit review basis to assure scientific quality and evidence of the institutional capacity and commitment.
- All grants will require an equal match of non-federal funds.
- Provision to assure that smaller or emerging institutions are not excluded from the program is made as noted in II. above.
- Because of the diversity and geographic distribution of agriculture, consideration of unique commodity and geographic factors may be considered in establishing priorities and selection of projects.

To implement the program within the above principles, it is proposed that:

1. The Secretary of Agriculture, in consultation with the Joint Council on Food and Agricultural Sciences, shall develop a ranked list of priority research areas in which there are significant shortages of research facilities or equipment in the system.

2. The list of priority research facility needs would be made available to eligible institutions annually.
3. Institutions submitting proposals for facility grants under the program should submit the following information:
  - a. Evidence that the research program to be conducted in the proposed facility is consistent with the institution's current and projected research program.
  - b. Evidence that the proposed facility, research program, and building design have been approved by the institution's central administration.
  - c. Where applicable, evidence that the state will accept the increased costs and support associated with maintenance of the proposed facility.
  - d. Evidence of the institution's commitment and capacity to provide the faculty, support staff, operating funds, and graduate students (as appropriate) necessary to support a quality program in the proposed facility.
  - e. An outline of the proposed administrative structure and environment to encourage the formation of cross-disciplinary teams necessary to address priority research problems.
  - f. Certification that the institution can and will meet the non-federal funds matching requirement of grants under the the program and identify the source of the matching funds.
4. The Secretary of Agriculture, in consultation with the President of the National Association of State Universities and Land-Grant Colleges, shall name Merit Review Panels to review and rank submitted proposals for funding. The panels should consider the following:
  - a. Whether the outlined research programs and the identified facility needs fit the priority research area under which the proposal was submitted.
  - b. If the proposed research program/facility have technical merit and whether the proposed research is appropriate for the institution's research objectives.
  - c. The national level of funding available from public sources for the proposed research program. (This is to guard against over investment in some areas.)
  - d. Determine the projected benefits that will result from the proposed research activity, including contributions to regional and national agricultural growth and adjustment.
  - e. Determine, in the case of smaller or emerging institutions, the acceptability and reasonableness of the proposed method of matching the federal funds.

5. The Secretary of Agriculture shall institute an independent process to conduct feasibility studies and on-site evaluations of all proposals recommended for funding. The costs incurred for such feasibility studies and site evaluations shall be borne by the applicant. Successful applicants may apply such costs as part of their required non-federal match.

## CONCLUSION

The overriding objective of this proposal is to specify ways to improve the research and graduate student training capacity of the public agricultural research system to ultimately improve the competitive position and profitability of U.S. agriculture. Improved coordination and enhanced efficiency in the use of federal and state research facility funds will result in a more effective research response to the increasingly complex problems facing U.S. agriculture. National investment in agricultural research facilities will assist agriculture in cost control, product and market development, and the safer, more effective use of our resources. All are essential if the United States is to have a viable, sustainable, profitable agricultural industry in the 21st century."

Copies of the original report of the Special USDA/NASULGC Committee entitled "American Agriculture in the 21st Century Depends on Current Research Investments" are available from:

NASULGC Board on Agriculture  
Suite 710  
1 Dupont Circle, NW  
Washington, DC 20036-1191  
Telephone: (202) 778-0858

---

## STATEMENT OF DR. COLIN KALTENBACH, DIRECTOR, ARIZONA AGRICULTURAL EXPERIMENT STATION

The Experiment Station Committee on Organization and Policy (ESCOP) thanks you for the opportunity to present this testimony on behalf of the FY 94 Budget Committee, Board on Agriculture, National Association of State Universities and Land-Grant Colleges (NASULGC). The 105-year Federal-State partnership in support of agricultural research has developed the world's most productive and efficient system for the production of food and fiber. Numerous studies have shown that annual rates of return on investments in research for agriculture are in the 30-60 percent range, several times that typically obtained from conventional investments in other enterprises.

Agriculture is our nation's oldest, largest, and only essential industry. The very success of research in agriculture has led to some temporary surpluses giving the perception that further investments in research are not a priority. In fact, investments in agricultural research have never been more essential. We are expected to meet the challenge of feeding a population that is predicted to double to 10 billion by the mid-21st century while protecting our natural resource base of soil, water, and genetic diversity. To meet such a challenge we must increase our scientific knowledge and develop new technology. This cannot be done without both short-term and long-term investment.

An infrastructure consisting of facilities, laboratories, equipment, farms, and research scientists is in place throughout the nation to assist in this effort. Unfortunately, federal formula funds have eroded for more than a decade and state appropriations have also been severely reduced over the last few years. The result is a loss in capacity for the State Agricultural Experiments Station System to meet new challenges that occur on a yearly basis. The Russian Wheat Aphid and Sweetpotato Whitefly are but two examples of recent challenges that require immediate and substantial resources to prevent devastating consequences. We are requesting a 5% increase in formula funding for FY 94 to maintain research capacity.

The National Research Initiative, developed and justified as a \$500 million initiative, is currently funded at only \$97.5 million. This highly successful program supplies, on a competitive basis, technicians, graduate students, and other inputs needed for critical projects in six major areas including Natural Resources and the Environ-

ment, Food Safety, and New Processes and Products. Funding for FY 94 of at least \$162 million is requested to keep this high priority, productive program moving forward.

In addition to the National Research Initiative, we seek to expand programs in Sustainable Agriculture, Alternative Crops, Integrated Pest Management and Biocontrol, Pesticide Clearance, Animal Health and Well-Being, and Rangelands. These important programs, funded with special grants and authorizations, address high priority national, regional and state problems including efforts which add value to traditional agricultural products.

Global competitiveness and environmental degradation are major societal concerns. These two issues often lead to positions that seem irreconcilable. Some view new technology as potentially environmentally hazardous while others feel environmental regulations are economically constraining. In fact, advances in research can provide the means to move both the environmental and economic agendas forward in a positive manner.

We seek funding for three new initiatives: Solid Waste Management, Forestry Ecosystem Management and Strengthening the Rural Workforce through stability and well-being of families, youth, and the elderly. Virtually every city and community faces solid waste management problems that require research-based solutions. Vice President Gore has stated that "forests represent the single most important stabilizing feature of the Earth's land surface." Improved management of our forest resources requires new scientific knowledge and technological development. Advances in American technology and maintenance of an economic advantage requires a capable work force provided by stable families and communities. Traditional approaches for educating the technical work force, targeting markets, and satisfying consumers will not work in a society with a changing cultural composition, family organization and community structure. The scientific research base underlying emerging Cooperative Extension initiatives on families, communities, and rural development needs to be strengthened.

Publicly funded agricultural research is an investment in the future of this country. A safe, affordable, and reliable food supply is an essential guarantee that our government must make to its people. This budget request for agricultural research is the product of a comprehensive strategic planning process beginning with users of the products of research at the state level and ultimately passed through the NASULGC structure to the USDA Joint Council on Food and Agricultural Sciences.

I urge the members of this Subcommittee and the Congress to achieve the agricultural research funding levels proposed by the National Association of State Universities and Land-Grant Colleges.

---

## STATEMENT OF DR. B.K. WEBB, DEAN AND DIRECTOR, COOPERATIVE EXTENSION SERVICE

National Association of State Universities and Land-Grant Colleges  
Extension Committee on Organization and Policy, 1994

Mr. Chairman, I am B. K. Webb, Dean and Director for the Cooperative Extension Service at Clemson University. In my testimony today, I represent all State Directors of Cooperative Extension in the United States as the chair of their 1994 Budget Committee. Rather than enumerating each item and its budget request, my testimony will highlight the areas most in need of attention by Congress in 1994.

The highest priority for the Cooperative Extension System in 1994 is increasing base support. Other major priorities are (a) expanding funding for national initiatives and (b) providing support for the Nutrition Education Initiative.

### I. KEEP BASE SUPPORT STRONG

The Cooperative Extension System is built on financial support from federal, state, and local partners. Over the past ten-year period, 1982-1991, federal support increased only an average of 3.1% per year and declined in its overall share of contributions. Funding from the three partners has failed to keep pace with inflation and the need to address issues of national importance. As a result, the majority of state Extension services are undergoing varying degrees of retrenchment. The integrated system of support which undergirds a network of Extension educators



reaching into every county in the United States has eroded. A recent study reported in a trade publication indicates nearly two thousand Extension positions were lost in 28 states since 1982. Unless the pattern of funding changes very shortly, the network will be irreparably harmed.

Smith-Lever 3(b)(c): We recommend a very modest five (5) percent increase in Smith-Lever base funds. Matching funds from state and local sources are required for these funds. These core funds maintain the community-based network which is critical to the implementation of all national initiatives and base programs. Those whose major interest is in new initiatives of water quality, youth at risk, and food safety must understand that those initiatives build upon an existing network of community-based Extension personnel. Without that network, the initiatives cannot succeed. Those with a major concern for the Nutrition Education initiative must understand that the ability to reach limited resource families in rural and urban America depends upon the maintenance of the community network of Extension educators. Those whose major interest is agricultural production must understand that it is Smith-Lever (b) and (c) funds which support Extension Specialists in Colleges of Agriculture. No increase in base funds will mean further reduction in these positions.

DC Extension & 1890's: Our budget request includes an increase of only five (5) percent for DC Extension and 13.2 percent for the 1890 Land-Grant institutions and Tuskegee University. DC Extension is a key part of the system's overall effort to improve nutrition and health education to limited resource audiences. Most 1890 institutions depend entirely on federal budget support. They have made major commitments to adolescent health and teen pregnancy prevention and to education for families with children 0-5. Expanded funds will also enable them to improve their work with small scale farmers on sustainable practices.

## II. SUPPORT EXTENSION NATIONAL PRIORITIES

Three high priority Extension initiatives have been started in recent years with the support of Congress. We wish to continue and expand the development of those three initiatives: Water Quality and Management, Youth and Families at Risk and Food Safety and Quality. In addition, we are particularly interested in obtaining funding to implement the sustainable agriculture sections of the 1990 Farm Bill.

Water Quality and Management: Congress has continued to appropriate additional funds each year in support of this successful coordinated multi-agency effort to improve water quality and management. Funds provided to Extension are targeted primarily to educational efforts in 74 hydrologic zones and 16 demonstration sites. We recommend an increase from \$11.375 million to \$13 million.

Youth and Families at Risk: Land-Grant universities have developed the finest system of non-formal education for young people. We reach 5.4 million youth through 4-H and other educational efforts. The Cooperative Extension System has recognized the serious problems confronting families and children and with Congressional help has intensified our efforts to reach youth confronting such risk factors as poverty, high incidence of drug use, teen pregnancy, and inadequate housing.

With \$10 million, Cooperative Extension Service has served more than 70 communities with expanded educational programs. An independent evaluation completed in February 1993 affirmed the effectiveness of innovative approaches being used.

**Food Safety and Quality:** Media attention has made food safety an item of great concern to consumers, processors, food handlers, and producers. This initiative has enabled Extension to expand education programs for critical audiences in order to protect the safety of food from production to consumption.

Additional funding is requested to build upon the pilot efforts currently in place under the \$1.5 million 1993 appropriation. In order to address these issues on a national scale, rather than through a handful of demonstration projects, the increase is necessary.

**Sustainable Agriculture:** American farms and ranchers need immediate assistance in developing management practices and technologies that will enable them to remain economically competitive and viable, while protecting the environment and natural resources. In the 1990 Farm Bill, Congress authorized the development of research and education programs that will promote sustainable agricultural production systems and practices. As part of these programs, Congress recognized the need to better train Extension Agents and other agricultural and natural resource professionals in the new technologies being developed.

A Sustainable Agriculture Technology Development and Transfer Program will advance the Cooperative Extension Service's ongoing Sustainable Agriculture Initiative and meet the Congressional mandate for increased Extension programming in sustainable agriculture through national, regional and state coordinated training and outreach programs.

The 1990 Farm Bill requires that all agricultural agents of the Cooperative Extension Service complete a national sustainable agriculture training program by 1995; all new Extension Agents are required to complete the training within 18 months of employment. In addition to Extension Agents, training will be provided to appropriate field office personnel from the Soil Conservation Service (SCS), the Agricultural Stabilization and Conservation Service (ASCS), and other professionals.

As specified in this legislation, the Cooperative Extension System is to assist in developing and facilitating the adoption of sustainable agriculture, whole farm integrated management systems, and natural resource management strategies. Those programs are to be coordinated where applicable with the Low-Input Sustainable Agriculture (Section 1621), Integrated Management Systems (Section 1627), Integrated Pest Management (Section 1650), Water Quality and Nutrient Management Research (Section 1484), and other appropriate research programs.

### III. SUPPORT THE NUTRITION EDUCATION INITIATIVE

The initiative includes an increase in EFNEP funding and a new item to support nutrition education for WIC families and other limited resource families.

Limited resource audiences with either limited income or education, or both, struggle to gain access to information on nutrition. Educational programs and materials have not always been prepared with attention to diverse cultures or low literacy. These new funds will provide for a major new effort to develop appropriate materials and information and to deliver the information and education in effective ways.

This initiative builds upon excellent existing nutrition education programs in the Cooperative Extension System, including EFNEP. Therefore, with new funding, implementation will proceed immediately.

## CONCLUSION

Mr. Chairman, let me assure you the Cooperative Extension System has faced up to rapid change in society and the economy and has redirected our program efforts to better serve agriculture and rural America, to address directly the growing needs of families and children in difficult circumstances, and to assist communities as they plan for a better future. These changes have not come easily, or without debate, but the System has focused on issues of greatest national importance. We seek Congressional support to keep our base programs strong and to continue to invest in these initiatives of national significance.

---

## STATEMENT OF DR. JOHN M. WHITE, ASSOCIATE DEAN, COLLEGE OF AGRICULTURE AND LIFE SCIENCES

Mr. Chairman and members of the Subcommittee, I am John M. White, Associate Dean and Director of Academic Programs of the College of Agriculture and Life Sciences at Virginia Polytechnic Institute and State University. I am also Chair of the FY 1994 Budget Committee for the Academic Programs Section of the National Association of State Universities and Land-Grant Colleges (NASULGC). The opportunity for inclusion of my full statement in the hearing record is very much appreciated.

My testimony is offered in support of the NASULGC FY 1994 Budget request. The Academic Programs Section requests funding to support Higher Education initiatives in the food, agriculture and natural resources sciences. This strategic investment in higher education will facilitate the development of human resources through graduate and undergraduate instruction and ensure greater access to quality education for all American youth.

This request has become even more important because of the national realization that educated and trained human capital is a critical national resource and, as such, a key federal responsibility. The recent report issued by the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET) offered suggestions for federal agencies regarding support of our higher education system. "There is rising concern that the greater rewards associated with research, accentuated by patterns of federal support, may be having adverse effects on the quality of undergraduate education. Federal agencies should examine the impact of federal research support on university undergraduate and graduate education and identify strategies to ensure against unintentional degradation of the educational mission and excellence of the research-intensive universities."

A second report issued by the President's Council of Advisors on Science and Technology, chaired by the President's science advisor, raised the same concerns and shared similar recommendations. "Universities should reemphasize teaching in all its aspects, both inside and outside the classroom...The federal agencies should ensure that their programs encourage universities to reemphasize education rather than discourage them, even inadvertently." Among the specific recommendations offered were for "increasing direct senior faculty involvement in teaching, and an increased involvement of undergraduates in hands-on frontier research." These and other recommendations are addressed by the academics programs of the office of Higher Education Programs of the USDA.

Recent testimony before the subcommittee of the House Science, Space and Technology Committee reiterated this concern. The committee took note of several witnessed recommendation that "if

federal agencies follow the lead of the NSF and broaden the base of funding for universities to embrace the full range of scholarly activity, an important concomitant will be increased attention to teaching and the integration and application of knowledge." The academic programs of the Office of Higher Education Programs provide the USDA with the opportunity to broaden its base of funding.

Mr. Chairman, the Academic Programs Section of NASULGC feels it is critical that we recapture excellence in the United States' higher education system in agriculture, home economics, natural resources sciences, and veterinary medicine. It is essential that sufficient investments be made to insure the availability of a critical mass of creative scientists and professionals capable of solving the complex problems facing the food and fiber industries, and to help feed a hungry world. Funds requested to support USDA programs in higher education are for the explicit purposes of enriching the quality of the educational experience, enriching the quality of the student body and expanding ethnic and cultural diversity of students enrolled in Colleges of Agriculture and related sciences. Such an investment in human capital will pay major dividends by producing a sufficient and highly competent work force serving all Americans through food, agriculture and natural resources sciences.

The Academic Programs Section request for FY 1994 Higher Education programs will be used as follows:

- Institution Challenge Grants
- Graduate Fellowships Grants
- Minority Scholars Grants
- 1890 Capacity Building Grants
- Telecommunications
- International Higher Education Grants
- Morrill-Nelson Program

#### Institution Challenge Grants

The funds requested are directed toward targeted national problems. These highly competitive challenge grants help to promote innovative academic programs, enhance faculty quality, promote university partnerships with industry and among other colleges and universities, and stimulate non-Federal support for higher education via a matching requirement.

Projects supported focus on curricula design and materials development, faculty preparation and enhancement, instruction delivery systems, and student experiential learning.

#### Graduate Fellowship Grants

This high priority program requests funding to support competitive graduate training grants to outstanding U.S. scholars who desire to pursue studies in targeted critical national priority areas in the food and agricultural sciences. Doctoral and masters' students will be supported in the targeted specializations: viz; Food, Forest Products, Agribusiness Management and Marketing; Plant and Animal Biotechnology; Food Science/Human Nutrition; Agricultural Engineering; and Water Science.

Since the initiation of this program in 1984, funding has been sufficient only to support a total of 675 graduate stipends. These intellectually superior Doctoral and Masters' scholars had average GRE scores of 1300 and 1050, respectively. The success rate of these students is extremely high.



### **Minority Scholars Grants**

This new program is designed to increase the ethnic and cultural diversity of the food and agricultural scientific work force necessary to meet the demands of the decade. A more proactive plan by the Land-Grant Colleges and Universities, with USDA and Congressional support, is required in order to advance minority higher education and mainstream the development of minority scientists. The funds requested will be used to support new minority students, through the baccalaureate degree, in the food and agricultural sciences.

### **1890 Capacity Building Grants**

It is the expressed goal of the USDA to assist the 1890 institutions through this funding, to significantly strengthen and broaden academic and research programs through the establishment of new areas of excellence and the enhancement of existing ones. Funds are targeted to support curricula design and materials development, faculty preparation and enhancement, instruction delivery systems, student experiential learning, and high priority research initiatives.

The 1890 Land-Grant Institutions and Tuskegee University are a valuable and irreplaceable component of the U.S. higher education system in food, agriculture, and natural resource sciences. This competitive program responds to the need to advance the capacity of these institutions in teaching and research, and to advance partnerships with industry and institutions.

### **Telecommunications**

Advances in telecommunications have opened new opportunities for addressing the rapidly changing educational needs of U.S. agriculture. A newly established Agricultural Satellite corporation (AG\*SAT) is designed to enhance the competitiveness of America's agriculture by sharing (via satellite-transmitted courses, conferences, and seminars) rapidly expanding scientific knowledge and technology among students, teachers, producers, processors, distributors, and agribusiness. The funds requested will be used to support the management of a national system of satellite communication for academic program delivery.

### **International Higher Education Grants**

For this program, we request funds to enhance the global competitiveness of U.S. agriculture by assisting U.S. universities to prepare graduates capable of competing internationally. Internationalizing higher education programs will require support to: (1) develop or expand curricula on global agriculture and add global dimensions to domestically-oriented core curricula; (2) support first-professional experiences in foreign agriculture for faculty; and (3) support international agriculture internships for U.S. students.

### **Morrill-Nelson Program**

This is the only permanent authorization in support of higher education in the food and agricultural sciences. The funds are used for faculty salaries, curricula development, and other instructional operating expenses. Funds are distributed equally among the states.



Mr. Chairman, and members of the Subcommittee, the Academic Programs Section of the National Association of State Universities and Land-Grant Colleges appreciates the opportunity to provide testimony in support of Higher Education Programs in the food and agricultural sciences and asks that full consideration be given to our request.

---

## STATEMENT OF DR. DAVID O. HANSEN, ASSOCIATE DEAN AND DIRECTOR, INTERNATIONAL PROGRAMS IN AGRICULTURE

Mr. Chairman and Members of the Subcommittee, my name is David Hansen. I am Associate Dean and Director of International Programs in Agriculture at The Ohio State University. I submit this testimony on behalf of the International Committee on Organization and Policy (ICOP), of the Board on Agriculture of the National Association of State Universities and Land-Grant Colleges (NASULGC).

The rapid spread of technological change is revolutionizing virtually all aspects of our lives, from the genetic mapping of plants to the near-instantaneous transmission of information anywhere in the world. In order for the United States to sustain a competitive advantage in the world, the U.S. science and technology base must be maintained and enhanced. The agricultural science and education programs of both USDA and the land-grant university system must consider that the prosperity of U.S. agriculture will depend on our active participation in the global science and education networks.

Developing international research, higher education and information programs that result in economic benefits to U.S. farmers can be accomplished by systematically linking the U.S. science and education community -- the land-grant system -- to its international counterparts. Global interaction can be realized in the following areas:

- Research: Collaboration with international agricultural research centers is necessary to ensure that U.S. scientists have access to state-of-the-art products and technologies. New relationships with overseas agricultural research institutes need to be established and old ones strengthened.
- Higher education: Internationalizing higher education programs will create a human resource base that can successfully contribute to the U.S. economy in the global marketplace.
- Information: Rapid access to global information is essential in order for U.S. agricultural scientists to keep pace with global scientific and technology developments.

In the 1990 farm bill, Congress authorized an enlarged role for USDA in terms of collaboration with institutions throughout the world engaged in agriculture and related research and extension activities. The international dimension of science and education, not as a separate component, but fully integrated into USDA, must be a priority. ICOP requests that this subcommittee seriously consider funding these activities in its appropriations for fiscal year 1994. We stand ready to work with you and USDA in further developing these activities.

Thank you.

## STATEMENT OF DR. SUNIL K. PANCHOLY, DIRECTOR, AGRICULTURAL RESEARCH

Representative of the Association of Research Directors, 1890 Universities and Tuskegee, on the FY '94 Budget Committee, Board on Agriculture, National Association of State Universities and Land-Grant Colleges (NASULGC). Research Director, Florida A&M University, Tallahassee, Florida.

### Testimony

The Association of Research Directors (ARD) strongly supports the two top priorities and the total budget recommendations for FY '94 submitted by the Budget Committee, Board on Agriculture, NASULGC. An increase of 5.0 percent in base funds for research is being requested. These programs represent the long-term commitment of Land-Grant Universities to maintain a stable research base including personnel and facilities in the fields of agriculture and food sciences, natural resources and environmental sciences.

We strongly support the recommendation for an increase of 5.0 percent in base funds for the EVANS-ALLEN BASE PROGRAM at the 1890 Land-Grant Institutions in FY '94. These funds provide the principal support to conduct basic and applied research to ensure a safe, economical and adequate food supply, promote a sustainable environment, conserve the natural resource base, and contribute to the improvement of the socio-economic well-being and overall quality of life of diverse rural and urban populations. These funds also contribute to the development of professional expertise (especially, minority students) in the food and agricultural sciences through focused research programs.

We strongly support the recommendation for funding the 1890 CAPACITY BUILDING GRANTS PROGRAM at \$13 million in FY '94. This program is critical in enhancing teaching and research programs at the 1890 Land-Grant Institutions and in advancing partnerships with industry, USDA agencies and other institutions of higher learning. Results from the previous three fiscal years have shown that this is a highly competitive program which helps in building both research and teaching in food and agricultural sciences on these campuses.

We also strongly support two programs that were authorized in the Food, Agriculture, Conservation and Trade Act of 1990: 1890 FACILITIES GRANTS (\$8 MILLION) and 1890 INSTITUTION CENTERS (\$2 MILLION). The facilities program enables the 1890 Institutions to provide opportunities and state-of-the-art facilities and equipment for scientists and students. The appropriation for the 1890 Institution Centers would provide for the establishment of five National Centers.

---

## STATEMENT OF GILBERT TAMPKINS, ASSOCIATE ADMINISTRATOR, 1890 COOPERATIVE EXTENSION PROGRAM

Mr. Chairman, I am Gilbert Tampkins, Associate Administrator for Extension at Langston University, Langston Oklahoma. On behalf of the sixteen 1890 Institutions and Tuskegee University, I am pleased to submit testimony to the Subcommittee on Agriculture, Rural Development, Food and Drug Administration, and Related Agencies of the House Committee on Appropriations.

It is of special interest to the community of 1890 Institutions, and especially Extension that the new administration is taking a position of addressing issues affecting the nation which will bring more people into the mainstream who otherwise have

been neglected, omitted and in some cases forgotten as it relates to opportunities for personal, social and economical development.

As the new Administration and Congress move forward to create jobs, improve the nation's infrastructure, revitalize the economy, and bring standardization in health care programs and education, they will be able to rely on the strength, knowledge base, distant education capability and in general, strong support, from the 1890 Institutions and Tuskegee University, to respond to and focus on high priority issues of rural and urban America.

As the twentieth century draws to a close, agriculture is entering into a new technological era; Rural America is in transition and needs to be revitalized; Urban American is faced with staggering and complex issues; families are at risk, and a large percent of States economy across this nation are teetering on economic omission, unclear of impending landing.

The 1890 Institutions and Tuskegee University, often overlooked and under-utilized, have done a superb job of reaching and providing access to individuals and communities that are left out of the mainstream of today's and ultimately tomorrow's society. Extension at these institutions is concerned with educating people to adopt practices for addressing varied localized and far reaching conditions which impact upon their quality of life. Also, the appropriateness and practicality of strategic actions are concerns of Extension for existing communities within a new national and world order and to integrate the new practices and new technology into a process for meeting site specific conditions.

It is important to note that budget limitations, public policy, legislation and technological advances require close cooperation with other public sector agencies, and numerous types of private sector organizations and users. Through coalition with other agencies organizations and groups, programs are designed to provide insight into the changing economic, agriculture, social, health and environment issues.

There is a need to reach unserved, particularly underserved youth, such as youth living on limited resources, youth of color and youth living in high-risk environments. Many youth enjoy strong family support and needed protection, good health care, and an array of engaging and meaningful experience. This is certainly encouraged. But there are other youth who are living in a nation without a sense of well-being who fall prey to an environment of risk and failure and who need to be engaged in meaningful programs.

1890 Community based youth programs provide enriching and rewarding experiences for youth to acquire life skills, the abilities to communicate, make decisions, solve problems, make plans and set goals. Also, these programs provide training to strengthen adult and youth leadership and to improve human networks to broadened commitment and energy to their strategic work for addressing youth issues. It is documented that many youth make initial life long decisions about potentially dangerous behaviors as alcohol and other drug use, sexual activity, gang involvement and dropping out of school. Programs are designed to train and equip strategically placed youth and adult volunteers in rural and urban areas. The objective of the training is to engage people in meeting critical community needs such as education, health, public safety and environmental conditions for at risk-children to live up to the fullest of their potential.

THE 1994 BUDGET SUBMISSION FOR EXTENSION AT 1890 INSTITUTIONS AND TUSKEGEE WILL ASSURE MAINTAINING NEEDED BASE PROGRAMS AND PLACING EMPHASIS ON HIGH PRIORITY TARGETED ISSUES.

Base funding (28,000 million) represents the federal commitment to long-term State-Federal partnership with 1890 Institutions and Tuskegee University that provides continuing programs. Failure to move these funds above the previous year's level will constitute an impediment in program opportunity for the benefactors and providers. These funds give 1890 institutions

greater capability to respond to changing needs and priorities indicated below.

- A. Advance the opportunity for limited resources persons and groups locally, nationally and globally.
- B. Provide an educational pathway to learn, develop, make decisions, set goals and develop self-esteem for youth and families who are at risk.
- C. Seek ways to work cooperatively with a wide range of universities, governments, businesses, and private sectors organizing to prescribe dynamic experiences for key leaders and clientele.
- D. Strengthen staff to a level of expertise who can meet the challenges of societal issues more effectively through training, publications and education while demonstrating alternative methods and options for the resolution or abatement of societal problems.

Special targeted programs for 1890 Colleges and Tuskegee University address very critical and essential needs apparent across the nation. Five million dollars are included in the FY 1994 budget for support of the following programs: Teen-age Pregnancy and Health (1.5 million); Alternative agriculture/Small-Scale Farmers (1.5 million); Rural Economic Development-Leadership Development (.5 million); and Families with Children/Prenatal to Age Five(1.5 million).

Many people are unable to find or maintain employment due to a lack of basic education and marketable skills. Training will need to be provided to volunteers, educators, economic development organizations, grass root organizations and groups with the hopes of broadening their efforts to create jobs, increase household income, and improve the quality of life for families at risk.

1890 Institutions and Tuskegee will continue to implement programs to help families and communities develop strategic plans and implement elements of sustainability and leadership development that are necessary to bring a solid proactive individual and community plan to fruition. An example is the jobs readiness programs on skill development and how to establish home-based business.



Communities are encouraged to utilize data from using the reputational, social participation, event, science and technology analysis and positional approaches to solutions of problems to the critical mass.

#### SUMMARY OF BUDGET REQUEST FOR FY '94

(Thousands of dollars)

1890 Colleges and Universities and Tuskegee University

Base funds	\$28,000
Targeted Programs	5,000
<hr/>	
<b>TOTAL</b>	<b>\$33,000</b>

#### STATEMENT OF DR. SANDRA A. HELMICK, ASSOCIATE DEAN, COLLEGE OF HOME ECONOMICS AND EDUCATION

Mr. Chairman and members of the subcommittee:

The Board on Home Economics, on behalf of which I deliver these statements, represents the scientists of the nation's land-grant and state universities who have expertise in the area of human nutrition, child development, consumer sciences, family relations and other fields related to the well-being of family members. These academic professionals work to develop new knowledge, teach it to the next generation of family and consumer science professionals, and deliver it to the public through extension programs in each state.

Within this corps of scientists is the expertise to contribute substantially to each of the identified goals for the teaching, research, and extension programs of the land-grant university system.

#### Address Critical Social Issues in a Changing Global Society

The human costs of rapid change in the nation's social fabric and economic viability are tremendous as declining industries and deteriorating infrastructure place a burden on the residents of both urban and rural communities. The expertise to assist those affected by these changes exists in the land-grant system and can

be delivered through extension programs that empower families and communities to seek positive growth in times of transition.

Increased attention needs to be given to the workforce in rural communities. A critical component of economic development in rural areas will be the productive capacity of the labor force. Rural youth need educational programs that bring them to a competitive position with skills for a technological age and affirmation of a work ethic that supports a productive workforce. Underlying these programs to enhance rural human capital must be a research base that is relevant to the social circumstances of the 1990s. The special funding request for research on the rural workforce will support this targeted need.

The nation's concern for environmental protection leads to dissension in communities most affected by the constraints on natural resource industries such as logging and fishing and on manufacturing processes that produce negative externalities for the surrounding area. The social scientists in the land-grant universities have proven to be instrumental in resolving these conflicts through programs of conflict resolution, mediation, and negotiation. These are expanding areas of need for service delivery from the universities to the communities.

The cost and accessibility of health care in rural areas has already received targeted attention by the President's task force on health care. As the nation makes dramatic changes in the manner in which health care is provided and financed, research and educational programs related to health care policy need to be enhanced so that the interests of residents of rural communities are well represented in the national deliberations.

#### Provide a Safe, Affordable, and Nutrition Food Supply

Diet is recognized as critical in maintaining good health, although the relationship is more complex today than when we first learned that the intake of certain nutrients directly prevented certain illnesses. Many questions remain to be answered before we can recommend with assurance dietary guidelines that will reduce the incidence of cancer, osteoporosis, or cardiovascular disease. The research challenge is increased even further when environmental variables such as air and water quality and lifestyle practices such as smoking and exercise must be considered as contributing factors.

Even when these relationships are specified and confirmed, there remains the challenge to motivate people to make healthy food choices. The scientific expertise that exists within the group I represent is capable of not only determining the components of a healthy diet but also of understanding the preferences of the food consumer and how to influence dietary choices.

The food supply available to US consumers is more diverse and accessible than anywhere in the world as a result of abundance in production and efficiency in distribution. The purchasing power held by these consumers supports a high standard for quality in food products. Consumers increasingly seek to reduce risks to health and safety in the products they use, including automobiles, textiles, and pharmaceuticals, as well as food. Researchers need to assess the nature of consumer concern for safety in food products so there is an informed basis for educational programs for producers and consumers that will reduce unwarranted consumer anxiety and address substantiated problem areas in the production, processing, and distribution sectors. Again, the scientific expertise required must come from the behavioral and social sciences that can explore the consumer as well as the biological sciences that are fundamental to research on the food product itself. This combination of expertise exists side-by-side within the programs I represent.

#### Enhance the Global Competitiveness of U.S. Agriculture

At this critical time for the viability of the U.S. economy in the world market, it is important that scientists address the potential of new products and new markets. The expertise that exists in programs of apparel, textiles, housing, and food science should be applied to a better understanding of the needs of the world consumer so that U.S. products can be designed, produced, and distributed in a manner that maximizes our competitive position.

#### Attain Sustainable Agricultural Systems That Are Compatible With Environmental and Social Values.

The nation's concern for protection of the natural environment as well as viability of critical social systems needs to be communicated with a reasoned voice; the objectivity and insight to do so exists within the social and behavioral science programs of the land-grant universities. The research tools to assess public opinion and the mechanisms to deliver the results to

policy makers in the private and public sector also are part of the capability of the land-grant system.

Develop Scientific and Professional Expertise to Advance New Technologies and Global Relationships

Higher education is being challenged by new demands and declining resources. All of the aforementioned goals require a corps of scientists that have the latest methods and technologies to deliver the best science possible. The increasing diversity of the workforce must be recognized in the recruitment and education of the college student population. A national commitment to "putting people first" mandates the enhancement of the scientific expertise that exists in the human sciences -- nutrition, child development, consumer sciences, family relations, gerontology -- so that well-prepared professionals stand ready to meet the challenges of the next century.

The historic partnership of the federal government, the state universities, and local communities is a model for research and education that sets a standard for the rest of the world. This system of discovery and dissemination of new knowledge stands ready to serve the nation at this critical time. The daily needs and concerns of our citizens are gaining attention--food safety, youth development, job security, access to health care, well-being of the elderly. Within the programs represented on the Board of Home Economics of the land-grant organization exists the potential for effective assessment and interpretation of these needs and concerns, and for education programs designed in response to those needs whether delivered in community, workplace, or home settings.

---

STATEMENT OF DR. JOHN M. BOWEN, DIRECTOR,  
VETERINARY MEDICAL EXPERIMENT STATION

**NASULGC BOARD ON VETERINARY MEDICINE**

I am Dr. John M. Bowen, Director, Veterinary Medical Experiment Station, of the College of Veterinary Medicine, University of Georgia. I am presenting the FY '94 agriculture appropriation recommendations of the Board on Veterinary Medicine which is a member of the Commission on Food, Energy, and Renewable Resources within the National Association of State Universities and Land Grant Colleges (NASULGC). The veterinary colleges and the departments of veterinary science throughout the country join the NASULGC Board on Agriculture in recommending significant increases in FY 1994 appropriations for science and education programs in the U.S. Department of Agriculture. We believe that programs in research, extension, and higher education must be strengthened in order to provide the knowledge which will enable American agriculture to remain strong and provide the American people a safe and wholesome food supply at a reasonable cost.



## EXECUTIVE SUMMARY

Veterinary medicine is the biomedical arm of American agriculture and is critical to the protection and improvement of the health of agricultural animals. Food production and maintenance of an adequate food supply system are essential for a stable economy and a healthy society. Specific programs highlighted in this testimony in which veterinary medicine is making or could make major contributions are summarized as follows:

- Base Programs' support for animal health and disease research through Hatch Act and Animal Health (Section 1433) should be increased. The Animal Health (Section 1433) funding has received no increase in 15 years.
- National Research Initiative Competitive Grants Program:
  - Animal Systems - Provides important funding for research on the molecular and cellular biology of disease.
  - Natural Resources and the Environment - Veterinary Medicine could make important contributions to this program.
  - Nutrition, Food Quality, and Health - Veterinary Medicine could make important contributions to food safety through preharvest research.
- Special Research Grants for National Programs:
  - Animal Health and Disease - Effect rapid transfer of basic research information to the production setting.
  - Animal Well-being/Welfare - Define animal well-being/welfare in scientific terms and recommend guidelines.
  - Minor-use Animal Drugs - Promote clearance of animal drugs and biologics for minor uses and minor species.
  - Water Quality - Define impact of water quality on animal health.
- Sustainable Agriculture: Production animal medicine has a critical role in establishing reliable and practical sustainable farming practices.
- Companion Animal Medicine: Companion animals are a major national resource and deserve Federal investment in research to improve their health and well-being.
- Higher Education Programs: The National Needs Graduate Fellowship Program and the Higher Education Challenge Grants Program are critical to providing a continuum of expertise in the agricultural and veterinary medical sciences.

\*\*\*\*\*

### Veterinary Medicine's Role in American Agriculture

Veterinary medicine is the biomedical arm of American agriculture and is important to the protection of America's largest industry and the health of consumers. Veterinary medicine provides new science and technology to support a highly diversified agricultural system that produces safe food and fiber products for the citizens of our country. New opportunities in science and technology illustrated by explosive breakthroughs in modern biology and computer science, bring unparalleled opportunities for progress in agriculture through veterinary medical research.

#### Base Programs

Hatch Act:	FY 1993 Appropriation - \$168,785,000
	FY 1994 Recommendation - \$177,224,000
Animal Health:	FY 1993 Appropriation - \$5,551,000
	FY 1994 Recommendation - \$5,828,000

The animal health base program authorizes the distribution of federal funds for Animal Health and Disease Research on a formula basis to colleges of veterinary medicine and state agricultural experiment stations. Formula provisions of Section 1433 are unique in that funds are distributed to the States in relation to a State's livestock importance and its capacity to conduct animal health and disease research. Without these funds, the biomedical component of agriculture is unsupported because many veterinary colleges have no access to Hatch Act funding. The yearly uncertainty of funding in the Executive budget for this program has been a major difficulty in its operation. It has been added each year by Congress. Administrative requirements are similar to the Hatch Act. A one year carry over from date of release of funds should be authorized.



# **National Research Initiative Competitive Grants Program (NRICGP)**

**Animal Systems:** FY 1993 Appropriation - \$25,000,000  
FY 1994 Recommendation - \$30,000,000

Recent significant advances in molecular and cellular biology of animal diseases are opening up exciting possibilities in animal health research. The objectives of this program include the following:

- Molecular basis of the pathogenesis of disease.
- Manipulation of genetic material of disease-causing agents, animals, and animal cells to determine how host resistance is overcome and how genetic factors are related to immunity.
- Identify and develop rapid detection systems for genes associated with disease resistance.

## **Natural Resources and The Environment:**

FY 1993 Appropriation - \$18,000,000  
FY 1994 Recommendation - \$26,000,000

Veterinary research is needed as part of the cooperative efforts essential to improving environmental quality while providing for the needs of the world's population. We live in a complex era in which a variety of chemicals are generated from industrial, agricultural, pharmaceutical, energy-related, household and other sources. The veterinary profession has many skills and competencies which are needed to address crucial environmental issues. Examples of ways veterinary medicine can improve environmental quality include:

- Identify, quantify, and assess the impact of chemicals, antimicrobials, and natural toxins in animal tissues and feeds.
- Identify safe and environmentally acceptable opportunities and methods to recycle and dispose of wastes.
- Research the effects of surface and groundwater contamination upon animal health and food products.

## **Nutrition, Food Quality, and Health:**

FY 1993 Appropriation - \$6,500,000  
FY 1994 Recommendation - \$13,000,000

**Food Safety:** Consumer confidence in the food supply is of major concern to agriculture. There is increasing urgency to prevent the introduction of microbial and chemical hazards into the food chain as well as their detection before problems arise. Preharvest food safety programs are critical because chemical and microbiological hazards enter the food chain in the production unit. The following are important areas for veterinary research:

- Preharvest food safety research to identify the most efficient use of veterinary science and technology in assuring the on-farm production of safe foods of animal origin.
- Identify critical control points where hazards to health can be prevented from entering or be eliminated from foods.
- Develop methodologies to assess health risks during production, processing, and/or distribution of foods and feeds.

## **Special Research Grants for National Programs**

Section 1414.2.c.1, Public Law 89-106, as amended, authorized Special Research Grants in Animal Health for peer reviewed research projects. This program was initiated in 1979 and terminated in 1990 with the view that its mission would be assumed by the NRICGP. This view is incorrect. There is now a critical need to reinstate this program.

**Animal Health and Disease:** FY 1993 Appropriation - \$0.0  
FY 1994 Recommendation - \$3,000,000

A more rapid transfer of basic research information to the production setting is needed. Thus, a new Special Grant Initiative in Animal Health is proposed. The initiative will focus on adapting basic research discoveries to the

production site. This would ensure that the mission-linked component of the NRICGP would be implemented. It is especially important that fundamental research findings of the NRICRP be applied to the resolution of new and emerging disease problems in the production setting. This funding will be managed through issuance of very specific RFA's that would focus on critical animal health and disease areas that are not funded through the NRICRP.

This program would also enable U.S.D.A. to address emerging or reemerging infectious diseases. Such diseases over the last several years include the Porcine Respiratory and Reproductive Syndrome (PRRS); bovine tuberculosis; bovine protozoal abortion (BPA); foot warts in dairy cattle; spiking mortalities of broilers, chicks, and turkey poults; and mystery disease of horses. These diseases cause serious economic losses and affect international trade.

Animal Well-being/Welfare: FY 1993 Appropriation - \$0.0  
FY 1994 Recommendation - \$3,000,000

Veterinary research relating animal well-being to health, behavior, environmental stress, and productivity is needed. Currently, there is not enough basic scientific information available to define what constitutes a state of well-being of food animals to address these issues. Behavioral, physiological, health, and production parameters will all need to be considered. Space requirements must be evaluated in balancing production efficiency, economical goals, and well-being. Veterinary research can effectively define and develop guidelines to optimize the well-being, performance, and productive lifetimes of livestock, poultry, and companion animals. Examples of veterinary research imperatives to assure animal well-being/welfare include:

- Define behavioral and physiological characteristics affected by stress in animal production and care units.
- Develop benefit-cost ratios for potential management, nutritional, environmental, and other changes implemented to improve animal health and well-being.
- Understand and control stress in production animals through improvements in management systems.

Minor-use Animal Drugs: FY 1993 Appropriation - \$464,000  
FY 1994 Recommendation - \$650,000

Interregional Project #4 (IR-4) has been very effective in obtaining clearances on minor-use animal drugs. Research programs to develop safe animal drugs and biologics for minor uses and minor species are prime examples of federal interagency cooperation with academic institutions, pharmaceutical industries, and commodity interests to effectively meet a need based more upon compassion for animal well-being than upon an expectation of major economic returns. Current funding does not permit rapid response to the steadily growing needs of industries such as aquaculture, gamebreeders, commercial pet suppliers, sheep, goats, and certain other segments of the livestock and poultry industries, e.g., ostriches, emus and rheas.

Water Quality: FY 1993 Appropriation - \$8,950,000  
FY 1994 Recommendation - \$9,080,000

The water quality special research grants program for FY 1993 and prior years has excluded the impact of water quality on animal health and the quality of food products derived from animals. This program emphasizes risk and remediation, both of which require assessment of health hazards to animals and people. Examples of how veterinary research could relate water quality and animal and human health are as follows:

- Develop better methods for detecting and quantifying natural or environmental contaminants and their metabolites in water and animal tissues.
- Define and assess the effects of chemical toxicants and microbes on animal health, reproduction, well-being, productivity, and food safety.
- Determine the impact of current animal agricultural management systems on groundwater and environmental pollution.

## Other Research Programs

## Sustainable Agriculture:

FY 1993 Appropriation - \$6,725,000

FY 1994 Recommendation - \$10,000,000

The goal of the Sustainable Agriculture Research and Education (SARE) is to support research and education projects that are designed to provide farmers and others with reliable, practical information on sustainable farming practices. The legislation mandates research to increase the knowledge of agricultural production systems that are profitable, competitive, compatible with the environment, and safe. Proposals from veterinary medicine have not been funded by the SARE Program, yet an integrated approach to maintenance of health in food-producing animals offers exceptional opportunities for increasing the safety, quality, and profitability of food animal products. Examples of veterinary research imperatives to enhance production animal management:

- Develop management systems, breeding programs, and immunological interventions that will enhance neonatal immunological protection against diseases.
- Develop and implement more sensitive and efficient methods to detect causes of production losses and inefficiencies.
- Identify critical control points in order to design strategies to assure disease-free animal-based foods of high quality.

## Specified Programs: Companion Animal Health:

FY 1993 Appropriation - \$0.0

FY 1994 Recommendation - \$8,600,000

(0.1% of pet food sales)

(Board on Veterinary Medicine)

Progress toward improving the health of companion animals continues to be impeded by very limited availability of funding specifically for research of direct benefit to companion animal health and well-being. This situation is made especially critical by the lack of any Federal funding targeted for companion animal health research. Research progress on parvovirus disease and brucellosis in dogs and leukemia in cats has important implications for better understanding of similar diseases in swine and cattle. Pet owners represent a significant taxpayer base and their expenditures for pet foods represent a major investment in the United States economy, i.e., about \$8.6 billion annually, an amount that is of definite benefit to U.S. agriculture. Over 108 million dogs and cats are found within 52% of U.S. households.

## Higher Education Programs

## National Needs Graduate Fellowship Program:

FY 1993 Appropriation - \$3,500,000

FY 1994 Recommendation - \$3,597,000

This program has become a key mechanism for recapturing excellence in food and agricultural sciences graduate education. It serves both to recruit and train academically outstanding graduate students and to strengthen the quality of graduate programs and faculty. It is a major force in developing excellence in the food and agricultural scientific and professional work force.

## Higher Education Challenge Grants Program:

FY 1993 Appropriation - \$1,500,000

FY 1994 Recommendation - \$4,000,000

This program meets several critical needs of U.S. colleges and universities in their efforts to produce world-class scientists and other professionals. It requires dollar-for-dollar matching support, thereby doubling the Federal investment and establishing several exciting partnership ventures. Since the program was launched in FY 1990 less than 18 percent of the excellent proposals generated in this highly competitive process could be funded.

## STATEMENT OF DR. ALAN R. EK, DIRECTOR, DIVISION OF FORESTRY

I am Alan Ek, head of the Department of Forest Resources at the University of Minnesota. Writing with me is Dr. Warren S. Thompson, dean of the School of Forest Resources at Mississippi State University. This statement is presented in our capacity as research chair and president, respectively, of the National Association of Professional Forestry Schools and Colleges (NAPFSC).

Our organization represents the 62 universities that conduct the nation's research, teaching and extension programs in forestry and related natural resource areas. We appreciate this opportunity to comment on three programs administered by the U.S. Department of Agriculture which undergird the educational and research efforts at these 62 institutions. They are the McIntire-Stennis Cooperative Forestry Research Program, the National Research Initiative, and programs conducted under the Renewable Resources Extension Act.

Funding appropriated by Congress for the Cooperative Forestry Research Program has been a critical part of the support for university-based research and vital to the training of future scientists and educators for more than 25 years. These funds have been wisely used. Each dollar in federal appropriations has been leveraged by a factor of five to six in nonfederal dollars in support of research programs having both regional and national significance.

Collectively, these programs have been an unqualified success. They have improved the understanding of i) the biology of forest organisms, ii) the structure and function of forest ecosystems, iii) human-forest interactions, iv) wood as a raw material and v) international trade, competition and cooperation. These university-based programs have made solid advances in extending our knowledge of the forest ecosystem and of the basic chemical, physical and biological forces which influence forest productivity. At the same time they have extended the market horizons for environmentally friendly and renewable wood based products. Further, this effort provided a better understanding of forest management systems appropriate for multiple-use of forest lands for timber, water, wildlife and recreation.

Notwithstanding the gains that have been made in developing research information needed to maintain the health, productivity and diversity of our forest resource, much remains to be done. In fact, the research community, in common with the administration and members of Congress, are caught up in the growing public concern over ancient forests, threatened and endangered species, global warming, wetlands, wilderness preservation, tropical deforestation, and related environmental issues.

In the state of Minnesota, we are attempting to complete a generic environmental impact statement assessing the long range and cumulative effects of timber harvesting on the state's forests and impacts on water, wildlife, recreation, aesthetics, economics and the sustainability of resource supply. This is but one of the many states that are seeking information to plan their future. These studies in themselves, however, show many of the same information inadequacies evident with federal lands.

Regrettably, the science to which resource management and national, state and local policy measures can be anchored is simply inadequate. The urgent need for research on environmental issues related to forest lands is most apparent at the state and local levels. Management of land for timber, water, wildlife and recreation is becoming increasingly more difficult and expensive for lack of reliable information on the best management and harvesting practices on a site specific, landscape and regional basis. It is noteworthy that environmental research was ranked first among research needs -- above timber production -- by the Southern Industrial Forestry Research Council, an organization representing the major forest-based industries in the South.

Our request for your continued support of university-based forest research is closely tied to the increasing importance of the forest resource to the economic and social well being of our citizens. The growing and processing of timber provides the economic underpinning for literally thousands



of communities in all regions of the country. As an example, in Minnesota, the forest products industry is the second largest industry and a major area of industrial expansion. In Mississippi, thirty-eight percent of all manufacturing firms are in the forestry sector. Collectively, these firms account for approximately one-fourth of all manufacturing employment, payrolls and value added and for almost half of all capital expenditures for manufacturing facilities.

There is convincing evidence that forest products will become even more important in the future. Global demand for forest products is increasing. This increase in demand coincides with diminished wood supplies in many established wood-producing countries of the world. The United States is well positioned in terms of timber supply and manufacturing and transportation infrastructure to satisfy a major share of this increase in demand. However, continued profitability of forest-based industries will require that we develop more efficient and environmentally softer production and processing systems if we are to compete in a growing international market where foreign competition is also increasing.

The economic characterization of the forest resource must also recognize the very significant degree to which our forests provide the setting for outdoor recreation and the considerable economic impact associated with that. In many areas, tourism and the forest products industry coexist very effectively and together make for very viable communities.

There is also convincing evidence that forests, by virtue of their structure and biodiversity, will become even more important as wildlife habitat and to maintain the gene pool for a wide range of plants and animals. Especially important to maintaining biodiversity will be the spatial linkage that we provide between forest communities across the landscape.

As a challenge, it is clear that the problems we are facing are more complex than any issue previously dealt with by mankind -- we will not be able to provide needed goods, services and values the people require AND sustain our ecosystems if we do not improve our understanding of how those systems function, both now and under some desired future condition.

President Clinton, in his recent statement, "Vision of Change for America," recognized the importance of a stronger forest resources research program. Further, the administration's budget request identifies forestry research as an important part of its investment strategy. We applaud the administration's efforts to make these investments.

The administration's efforts also fit well with the recent National Research Council study on forestry research authorized by the National Academy of Sciences. The study report entitled "Forestry Research: A Mandate for Change," recommended a significant strengthening of forestry research.

Since the National Research Council study report, a study implementation committee and plan was developed and we have been working closely with the implementation committee, USDA Forest Service Research, state foresters, forest industry, professional societies and interest groups to develop a cooperative research initiative focusing on forest ecosystem management.

This initiative would recognize that the scientific basis for ecosystem management requires a combination of (1) basic long-term inquiry; (2) issue-focused, problem solving interdisciplinary research and development; (3) scientific support to ongoing management of lands and resources, such as through ecological classifications, inventories, ecological analyses and monitoring and evaluation; and (4) integrating science into the policy-making process. From the standpoint of a university role, we see this as especially important to state and regional concerns as pressures on federal lands are shifted to other ownerships.

As part of the coordination in this initiative, university funding would be largely directed to the problems of state, local and private ownerships. In particular, the large non-industrial private forest landownership (NIPF) nationally would be targeted as one that will have to carry a larger share of the burden for timber production and where considerable improvement in management is both desirable and possible for a wide range of forest values.



This application of science to ecosystem management also calls for a systematic extension process to (1) provide continuing education for natural resource professionals; (2) enable landowners/managers to adapt and utilize research results; (3) assure basic understanding by public decision-makers and (4) reach the general public with education to guide their individual and collective efforts.

University-based forest research is an important part of the collaborative research effort involving federal, state and industry scientists and resources. Schools and colleges of forestry have the expertise in house to address a broad range of problems and opportunities related to the forest resource. Because of their university affiliation, they can conduct research on problems that require scientists from many disciplines. This is important in the context of increasing public concern about the environment and the need to maintain healthy, productive forests to meet the increasing demand for both consumptive and nonconsumptive uses of the forest resource. It is for these reasons that we respectively request your support in securing the appropriation that the administration has requested - \$28.045 million for the Cooperative Forestry Research Program.

We also urge your support of the administration's request for \$130.195 million as funding for the Competitive Grants Program administered under the National Research Initiative of the USDA. This program is part of the administration's investment strategy and it is increasingly important to natural resource scientists. It emphasizes high priority, basic and applied research needed to expand our knowledge base and to provide the foundation for future economic and social benefits. Funds from the National Research Initiative enable forestry schools and colleges to build upon the base provided by the Cooperative Forestry Research Program.

Finally, we request your continuing support for programs administered under the Renewable Resources Extension Act. Appropriations made available under this Act help make possible the timely dissemination of research results derived from the Cooperative Forestry Research Program and the National Research Initiative. Activities supported by these funds are an integral part of the outstanding programs conducted by the Cooperative Extension Service in each state. The administration has requested \$3.841 million for this program as part of its investment strategy. We urge your support for that or a higher level of funding. The task is large and the nation needs to move forward on it rapidly.

We are aware that our request for increases in funding for forestry research are being made at a time when Congress must deal with budget shortfalls. However, we believe that the number and complexity of the economic, social and environmental issues associated with the forest resources of the United States provides strong justification for increased funding. This position is supported by the "Forestry Research: A Mandate for Change" report in its recommendation that funding for the Cooperative Forestry Research Program be increased over a period of five years to its authorized level of fifty percent of the USDA Forest Service research budget. Currently, support for this program is only fifteen percent of the Forest Service research budget. As we noted earlier, increased funding is also supported by the President's "Vision for America" proposal and his budget request in which forestry research is noted as an important investment strategy for the nation.

In summary, we urge your support of the Cooperative Forestry Research Program at \$28.045 million; the National Research Initiative at \$130.195 million; and the Renewable Resources Extension Act at \$3.841 million or higher.

Thank you for this opportunity to present this statement.

## STATEMENT OF THE NATIONAL ASSOCIATION OF WIC DIRECTORS

The National Association of WIC Directors (NAWD) is pleased to have the opportunity to submit this statement on fiscal year 1994 appropriations for the Special Supplemental Food Program for Women, Infants and Children, known as WIC, under the administrative jurisdiction of the Food and Nutrition Service (FNS) of the United States Department of Agriculture (USDA).

NAWD commends the Committee for your continuing support for the WIC Program and your intense interest in the health and welfare of our nation's women, infants and children.

### NAWD Experience and Organizational Goals

Founded in 1983, and headquartered in Washington, DC, the National Association of WIC Directors (NAWD) is a non-profit voluntary organization of state and local WIC Program staff directors and nutrition coordinators). NAWD has a unique perspective on the operation of the WIC Program. Our members are dedicated to maximizing WIC Program resources through effective management practices and to making the WIC Program more responsive to the nutrition and health needs of women, infants (defined by WIC as 12 months of age and under) and children (defined by WIC as ages 1 to 5 years).

Among NAWD's goals are: the promotion of improved health, well-being and nutrition status for women, infants and children; effective national resource networking to facilitate the communication of ideas, materials and procedures to individuals working in the WIC community; the promotion of good management practices; peer assistance to WIC Program directors at the state and local level; and to act as a resource to government on issues relevant to the WIC Program and to the health and nutrition of women, infants and children.

### WIC Program Background

In fiscal year 1992, the WIC Program served approximately 5.3 million participants per month. Currently, the Program is estimated to serve approximately 5.8 million participants per month in the 50 Geographic States, the District of Columbia, Virgin Islands, Puerto Rico, Guam and in 32 Native American States. By the close of fiscal year 1993 (assuming passage of the President's supplemental appropriation request) the Program is estimated to serve approximately 6 million participants per month. It reaches out to over one-third of the nation's infants.

Eligibility for WIC benefits requires that WIC health professionals document potential participants' health or nutrition risk. Potential participants must demonstrate

that their family income does not exceed 185% of the Federal poverty income guideline. Preference for service is generally given to pregnant women and infants with at risk nutrition or health conditions. A lower priority is assigned to children and postpartum mothers at risk of nutrition or health consequences.

Among nutritional risk problems which can qualify participants for eligibility are: abnormal weight gain during pregnancy; a history of high-risk pregnancies; growth problems in children and infants such as stunting, underweight, or obesity; anemia; or an inadequate dietary pattern.

Services are delivered through a variety of local social service agencies or health clinics which have access to health care providers. Today, there are over 8,200 clinics providing WIC services nation-wide.

#### **WIC's Benefits**

WIC provides eligible participants with supplemental foods, nutrition education, breast-feeding promotion information and improved access to the health care delivery systems.

Because the Program is a nutritionally based education program, local agencies offer WIC participants at least two nutrition education sessions, conducted on either an individual or group basis, within each six month certification period. Through these sessions, participants learn about their specific nutritional needs as well as the nutritional needs of their infants and children. Participants are taught how to shop for nutritious foods and how to prepare economical, well-balanced meals. They are also counseled on the importance of regular medical care, the advantages of breastfeeding infants and the dangers of drug and alcohol use during pregnancy.

The WIC Program also provides supplemental foods through monthly food packages which are tailored to meet the special dietary needs of the infants, children, pregnant, postpartum and breastfeeding women in the program. Foods in the packages are selected to provide protein, iron, calcium, and vitamins A and C. These nutrients have been selected as they have been found to be missing from the diets of many low-income women, infants and children. Among the authorized foods provided in the supplemental food packages are: iron-fortified infant formula, infant cereal, milk, eggs, cheese, iron-fortified breakfast cereal, Vitamin C-rich juice, beans and peanut butter.

#### **WIC's Success Record**

Recent evidence of the WIC Program's successes in improving pregnancy outcomes have contributed significantly to its popularity. WIC has generated enthusiastic supporters in the nation's corporate board

rooms and vigorous bipartisan support in both houses of the Congress.

Numerous private and public sponsored studies of the WIC Program have demonstrated that WIC is a highly successful program that has achieved significant positive health consequences in a cost-effective manner.

According to a USDA study conducted in five states -- Florida, Minnesota, North Carolina, South Carolina and Texas -- and released late in 1990, showed each dollar spent on pregnant women in the WIC program saves from \$1.77 to \$3.13 in Medicaid costs for mothers and infants in the first sixty days after birth. A later study calculating the Medicaid savings used the full cost of an illness that started within 60 days after birth, regardless of length, revealed an even greater savings of between \$1.92 and \$4.21 for each prenatal dollar spent by WIC.

Still other studies have indicated that pregnant women on Medicaid who receive assistance through WIC are less likely to deliver premature or low birth weight babies. They are more likely to have healthier babies. These benefits result in enormous Medicaid savings and reduced federal and state health care spending.

In a May 1992 release of a General Accounting Office (GAO) report, GAO estimated that in 1990, the federal government spent \$296 million on prenatal WIC benefits resulting in a savings of \$853 million in health-related expenditures for WIC infants during their first year of life. On this initial investment, GAO estimated, the total savings in health and education related expenditures over a child's 18 years of life amounted to over \$1 billion.

Another study published in the "Journal of The American Medical Association" (September, 1987) demonstrated the efficacy of WIC in significantly reducing the prevalence of anemia and in reducing rates of height and weight abnormalities among children. While a study published in "The New England Journal of Medicine" (November, 1985) indicated a marked reduction in the levels of iron deficiency among children who had participated in the WIC Program.

Clearly, these studies and others suggest that failure to enroll all eligible participants in the WIC program actually costs the federal government far more money than is saved. The WIC Program is essential to ensuring that all our nation's children are physically, emotionally and developmentally ready for the challenges they will face as this nation moves to place itself in a more competitive position in the 21st century. The WIC Program is essential to meeting this goal. But WIC is not currently available to the majority of the nation's eligible one to five year old children.

### Corporate America Commits to WIC

In testimony before the House Budget Committee last year, the Chief Executive Officers of Prudential Insurance Company of America, AT & T, Honeywell, Inc., BellSouth Corporation and Sky Chefs, Inc., were unanimous in their support of WIC full funding by 1996. As Sky Chefs, Inc., CEO William S. Woodside put it:

"WIC is a prevention program that works extremely well. How can we justify failing to proceed expeditiously to extend WIC to all women and children who qualify for it? Children born today and in coming years will make up an increasingly large part of the workforce that will sustain our economy ... for much of the first half of the 21st century. Our neglect of these children not only damages them - it is counterproductive for our society."

Current funding levels allow roughly sixty percent of the nation's 8.7 million eligible women and children to participate in the WIC program. States have made every effort to maximize the use of WIC funds to increase participation levels. Further adjustments in food benefits could jeopardize the quality of services. Clearly, the need for full funding of the WIC program can be demonstrated.

### Funding Issues

In spite of a nearly three fold increase in funding for the program over the past ten years, and an almost 150% increase in the number of participants served, WIC still falls far short of reaching all of those mothers, infants and children who are at nutritional or health risk and eligible for the program.

### Administration Request

Earlier this year, in his Economic Message to the Nation, President Clinton proposed funding increases for WIC which reflects a fundamental commitment to the welfare of women, infants and children whose economic conditions may not provide the kind of nutrition needed for good health and normal growth. NAWD commends the President for his commitment to phasing in full funding for the WIC Program by fiscal year 1996. NAWD applauds him for recommending and this Committee for your support of the special supplemental appropriation of \$75 million for this fiscal year. NAWD also commends the President for his plan to provide subsequent increases in appropriations which would equate to approximately \$318 million in FY 1994 to achieve a participation level of 6.4 million, \$532 million in FY 1995 to achieve a participation level of 6.8 million, and \$800 million in FY 1996 to achieve a participation level of 7.2 million at the outset of FY '96 and 7.5 million or full funding by the close of that fiscal year, - based upon Congressional Budget Office



(CBO) and Office of Management and the Budget (OMB) projections. NAWD urges every member of this Committee to commit to appropriating the fiscal year 1994 figure to keep WIC on target for full funding by FY 1996. NAWD urges every member of Congress to support this proposal and help to place all of America's children on an even footing to face the future.

#### NAWD Full Funding Proposal

The National Association of WIC Directors recommended in 1991, that the Executive and the Congress adopt a five year plan to move the WIC Program incrementally toward funding "full participation" by fiscal year 1996. NAWD is delighted that this Administration supports our view and has chosen to move forward aggressively with this message in its economic plan. As the Congress considers full funding for the WIC Program NAWD urges you to: maintain the program's focus on nutrition; maintain the program's reputation for providing quality services by allowing states to incrementally add caseload thereby preventing undue burdens on WIC clinics, undue hardship for participants, avoiding service delays and potentially long waiting periods; maintain the Program's targeting and tailoring capabilities; and exempt WIC from all budget balancing legislation or agreements.

Clearly, the commitment you make to funding the WIC Program for the Fiscal Year 1994 - even at the levels NAWD, CBO and OMB have suggested - will not ensure that all of the nation's eligible women, infants and children are served, it will be a significant step in helping the program reach full funding by fiscal year 1996. The House and Senate Budget Committees and the House have each recommended that the Congress fund the WIC Program at levels consistent with the President's goal of achieving full funding by fiscal year 1996. NAWD encourages you to commit sufficient resources to keep WIC on target toward full funding in your deliberations regarding the FY 1992 appropriations.

Finally, NAWD proposes that at least \$2 million of those funds which are available to the Secretary for the purpose of program evaluation (currently one half of one percent, not to exceed \$5 million) be made available to states in the form of special projects grants. These grants would be available on a competitive basis to all states for special projects of up to two years in duration. Qualifying projects would have regional or national significance and be directed toward improving the services of the WIC Program. Under this proposal, states should have a minimum of two years to expend grant resources and complete approved projects.

#### Title V-Supported Health Services for Women and Children

WIC is often characterized as the Gateway to Health for the Women, Infants and Children who participate in the

Program. Essential to this Gateway is the ability to integrate Health Care services with WIC. The Title V Maternal and Child Health Services Block Grant provides funds to states to develop community-based, family-centered systems of preventive, primary and specialized care that coordinate and integrate public and private sector resources and programs. These community-based clinics are the backbone of the Health Care services system that WIC must integrate with. Title V direct service programs target the very families WIC serves - low income families; families with limited access to care; and families with children with special health care needs.

The federal Maternal and Child Health Bureau of the Department of Health and Human Services estimates that in Fiscal Year 1991: Approximately 850,000 pregnant women received Title V-supported prenatal care, approximately 4.5 children and adolescents received Title-V supported preventive or primary care and over half a million children and families received specialty care and support services through Title-V Children with Special Health Care Needs Programs. These estimates of nearly 6 million women, infants and children served clearly dramatize the significant increase since FY 1987 when approximately 3 million were served.

States responding to a survey of MCH needs conducted by the Association of Maternal and Child Health Programs indicated that: 94% of 51 MCH programs were experiencing increased demand for prenatal and/or pediatric care; the same percentage reported increased demand for pediatric services. Caseload increase ranging from 5% to 7% and three to four week waits for appointments in some areas were also reported. The number of private physicians accepting Medicaid patients have reportedly declined in nearly one-third of the states, contributing to increased demand for Title V-supported care. It is critical, that if WIC programs are to provide the Gateway service to an integrated health care system, the Title V Block Grant must be raised to meet the increased demands on the Program.

### Conclusion

In conclusion, the NATIONAL ASSOCIATION OF WIC DIRECTORS, NAWD, looks forward to working with you and the members of the Subcommittee and Full Committee as you consider fiscal year 1994 appropriations for the WIC Program. NAWD's Executive Director, Douglas Greenaway, the members of the Board of Directors stand ready to assist you in any way possible during this process. Again, thank you for the opportunity to submit this statement. The NATIONAL ASSOCIATION OF WIC DIRECTORS will gladly respond to any questions you may wish to address to the Association or provide you with supplemental information as you require.

## NATIONAL CATTLEMEN'S ASSOCIATION

STATEMENT OF GARY WILSON, DIRECTOR, ANIMAL HEALTH/INSPECTION,  
FOOD POLICY AND RESEARCH

The National Cattlemen's Association (NCA) takes a great interest in the development of the budget for the U.S. Department of Agriculture and the subsequent appropriation of funds for programs carried out by its numerous agencies.

Following are the views and policies of the NCA on certain programs at the USDA. We urge your consideration of these views and requests and ask that this document serve as NCA's official response to the proposed budget.

RESEARCH AND EDUCATION  
Cooperative State Research Service (CSRS)

NCA has identified the following research projects as top priority for the beef cattle industry. Beef producers will continue to provide industry support (check-off dollars) for these projects during FY94 in the hopes that the FY92 and FY93 approved federal Special Grant: Beef Carcass Evaluation and Identification will be re-appropriated, balancing the funding needs of the research. The combined results of these projects will enable cattlemen to efficiently produce lean beef products while maintaining taste qualities.

Special Grant: Beef Carcass Evaluation and Identification - Total FY94 Special Grant Request = \$497,500  
To date, monies used to support the grant's three research objectives include: Federal Special Grant FY92-93, \$420,000;  
Producer Check Off Dollars, \$1.6 million

Objective 1: To develop instrument assessment of carcass characteristics utilizing ultrasound technology.

Importance to Industry: An instrument grading machine functional at the point of slaughter will immediately determine true value differences between individual carcasses; provide distinct market incentives for producing lean, palatable beef products; and enable the industry to implement improved, efficient technological procedures during slaughtering/processing (i.e. hot fat trimming, hot carcass deboning, mechanical deboning).

Research Leader: University of Illinois, Dr. Jan Novakofski

Funding: Five Year Project Totaling \$5 million  
Funding Sources: Producer Check-off Support \$200,000/year for 5 years = \$1 million  
Total Appropriation Request FY 92-96 = \$4 million  
FY 94 Special Grant Request = \$200,000

Objective 2: To identify through bovine genome mapping, major genes effecting the palatability/quality characteristics of beef carcasses.

Importance to Industry: Once major genes have been identified, producers will be able to analyze a tissue and/or blood sample from a newborn calf and determine its carcass quality potential. This will enable the producer to better match efficient growing, feeding and marketing schemes with the genetic potential of the calf.

Research Leader: Texas A&M University, Dr. Jeremy Taylor

Funding: Five Year Project Totaling \$1.65 million  
Funding Sources: Producer Check-off Support \$150,000/year for 5 years = \$750,000  
Total Appropriation Request FY 92-96 = \$900,000  
FY 94 Special Grant Request = \$237,300

Objective 3: To quantify/qualify carcass trait information on live yearling breeding bulls.

Importance to Industry: It will improve current National Sire Evaluation Programs, enabling producers to select young breeding bulls whose future offspring will produce carcasses uniform in muscle, fat deposition, and carcass quality.

Research Leader: University of Georgia -- Dr. Larry Benyshek  
Iowa State University -- Dr. Richard Willham

Funding: Four Year Project Totaling \$796,290  
Funding Sources: Producer Check-off Support \$150,000/year for 4 years = \$600,000  
Total Appropriation Request = \$196,290  
FY 94 Special Grant Request = \$60,200

NCA supports the National Research Initiative (NRI) and proponents efforts to seek FY94 funding levels of \$150 million. NCA specifically requests that Animal Systems under the NRI be funded at \$37 million in FY94. NCA also supports CSRS efforts to administer the NRI funds through the competitive grant system.

NCA has noted the Administration's recommendations to discontinue funding for Animal Health and Disease. Cattlemen believe this would be a grave mistake for producers and consumers alike. The increasing international trade of live-stock and animal products; the growing interest in raising exotic wildlife and farmed deer and elk; and the re-emergence of tuberculosis in the animal and human populations serve as examples of why the U.S. should maintain specific programs to fund animal health and disease research. NCA encourages Congress to renew its support of Animal Health and Disease Formula (Section 1433) funds at \$5.6 million in FY94. NCA also requests that the Animal Health and Disease Special Grants (Section 1434) be restored at 1990 levels of \$5.5 million and awarded on a competitive basis. NRI projects are selected on writing skills and scientific merit and not the societal needs of producers and consumers.

NCA supports the Food Animal Production Consortium and the special funding request of at least \$2.5 million to support the Vision 2000: Economically Sound Pre-Harvest Food Safety Program. Land grant universities in California, Florida, Illinois, Kansas, Michigan and Nebraska have assembled research and problem-solving teams to develop and implement pre-harvest (on farm) food safety programs that are environmentally and economically sound. Implementation of the proposed

programs will lead to prevention of contaminants entering the food chain and will result in high quality, safe food for consumers and international trading partners.

NCA supports the American Sheep Industry Association's (ASI) request that \$500,000 be appropriated through a CSRS targeted special grant for a six-year study to measure and document the effects of sheep and cattle grazing on riparian and water shed areas. We propose that the project be a collaborative effort between CSRS through Montana State University and ARS through the U.S. Sheep Experiment Station at Dubois, Idaho. The study would be conducted on 17 sections of ARS managed U.S. Sheep Experiment Station summer rangelands located in the Centennial Mountains in Beaverhead County, Montana, along Odell and Tom's Creek.

#### Agricultural Research Service (ARS)

NCA is aware of the continuing inequity within the ARS budget between plant science and animal science funding.

To address this concern, the NCA encourages members of the agriculture appropriations subcommittee to support the following high priority projects to the ARS budget in FY 94:

1. **DEVELOP BASELINE DATA REGARDING THE INFLUENCE OF BEEF PRODUCTION SYSTEMS ON THE ENVIRONMENT.** Components of the research will focus on manure management systems that enhance forage and row crop production and soil quality while maintaining/improving water and air quality. The project will be coordinated at the Meat Animal Research Center (MARC), Clay Center, Nebraska, in cooperation with scientists at Lincoln, Nebraska and El Reno, Oklahoma. Project cost \$1 million.
2. **BOVINE TUBERCULOSIS**  
Components of the research will focus on the epidemiology, pathogenesis, and diagnosis of TB. The project will develop improved diagnostic tests that are more sensitive and specific than current tests for cattle, deer, elk, llama and bison.  
  
A comprehensive, multi-disciplinary approach is necessary to accomplish the stated research objectives. Cooperative research between ARS scientists and scientists at other institutions will most efficiently accomplish this mission. It is proposed that ARS receive \$1,500,000/yr to support three intramural ARS scientists, staff and biocontainment animal quarters. A portion of these funds would be used to support cooperative research with scientists at Cornell University, University of Wisconsin-Madison, Colorado State University, and Texas A&M University. Scientists at each of these institutions have expertise in working with M.bovis and other similar organisms.  
  
To create a balanced research program, we propose that an additional \$1,000,000 be earmarked for TB research and made available through the Special Grants Program administered by the Cooperative States Research Service to provide funding to qualified scientists from academic and government institutions. ARS would manage and coordinate the overall TB research effort.
3. **BOVINE GENOME MAPPING**  
NCA encourages continuing support for the ARS genome mapping/gene regulation project currently conducted at the MARC, Clay Center, Nebraska. Such commitment will improve the effort to map the bovine genome and identify quantitative trait loci and specific genes that influence disease resistance, meat quality, ovulation and protein and lipid metabolism.
4. **IMPROVE TECHNOLOGY AND MANAGEMENT OF THE BOVINE IMMUNE SYSTEM.** This project will enhance the investigation on viral immunosuppression and increase knowledge on how the bovine immune system can be influenced to improve animal health and well-being and production efficiency. The project will be conducted at the National Animal Disease Center in Ames, Iowa. Project Cost: \$1,000,000
5. **IDENTIFY METABOLIC INDICATORS OF ANIMAL STRESS.** This project will identify neural, endocrinological and immunological indicators of stress and collect behavioral observations in beef cattle exposed to various housing, handling and transport systems. Information will be used to outline voluntary production practices harmonious with humane care and animal well being. The project will be conducted at West Lafayette, Indiana in cooperation with Purdue University. Project Cost: \$800,000
6. **FURTHER DEFINE BEEF'S ROLE IN HUMAN NUTRITION.** NCA supports the President's request for better understanding of the human nutrition needs of children, the elderly, pregnant and lactating women and healthy adults.
7. **REDUCE THE POSSIBILITY OF VOLATILE RESIDUES IN BEEF FROM CULL DAIRY COWS.** Focus will be on priority compounds recognized as concerns by regulatory agencies and the beef industry. The research will provide rapid, inexpensive assays to detect residues. The project will be conducted at College Station, Texas. Project Cost: \$700,000

NCA strongly supports appropriations for the following ARS buildings and facilities:

Plum Island Animal Disease Center:	NCA supports the renovation and construction of all facilities necessary in order to conduct foreign animal disease research pertinent to the beef cattle industry, particularly foot and mouth disease. Of additional interest and priority is the research and development of a preclinical diagnostic test for sheep scrapie and prevention of bovine spongiform encephalopathy.
Large Animal Necropsy Incinerator Facility, National Animal Disease Center, Iowa	NCA supports the appropriation of funds supporting the construction of a new necropsy/incinerator facility at the National Animal Disease Center, Ames, IA.

#### Extension Service (ES)

NCA supports the President's request that \$3 million be appropriated to the Extension Service to administer the Integrated Management Systems, Chapter 2, Title XVI, Subtitle B, Sustainable Agriculture Research and Education. NCA expects that Extension will develop a process for evaluating and funding meritorious project proposals consistent with practices followed under Section 3d of the Smith-Lever Act.

NCA considers the FY94 appropriation to be a critical first step toward the development and coordination of Integrated Resource Management (IRM) and Integrated Crop Management (ICM) programs for livestock and crop producers respectively. The IRM interdisciplinary team approach to solving livestock producer problems is a critical part of sustainable agriculture. IRM projects of particular interest to beef and other livestock industries include the development of national, regional and local



programs, databases, decision support systems and training materials that document and evaluate management practices that are sustainable production systems.

NCA supports the funding of the National Water Quality Initiative administered by the ES and all voluntary water quality programs outlined in the 1990 Farm Bill.

NCA supports the Nutrition Education Initiative and subsequent funding for each agency responsible as outlined in the President's budget.

#### **NATURAL RESOURCES AND ENVIRONMENT** **Soil Conservation Service (SCS)**

NCA requests that \$20 million be appropriated for the Grazing Lands Conservation Initiative (GLCI) programs within the Soil Conservation Service. The number of range conservationists and technical personnel within SCS has significantly declined since implementation of the 1985 and 1990 Farm Bills. Over half of the U.S. land mass is used as pasture or range. The millions of private landowners who graze livestock on these lands need and deserve the conservation assistance of SCS.

The GLCI was developed as a cooperative program among landowners, conservation districts, producer groups and SCS to facilitate information exchange by:

- Strengthening partnerships between producers and others;
- Promoting voluntary action and respecting private property rights;
- Encouraging diversification to achieve multiple natural resources benefits; and
- Emphasizing training, education and increased public awareness.

In order to accomplish these benefits, the GLCI should 1) receive line-item funding in the USDA/SCS budget, 2) hire personnel trained in pasture and range management, and 3) provide qualified technical assistance to landowners at their request.

#### **MARKETING AND INSPECTION SERVICES** **Animal and Plant Health Inspection Service (APHIS)**

**Brucellosis:** NCA is pleased with the significant progress that is occurring with the Brucellosis eradication program. However, it is important to maintain adequate funding to complete the brucellosis eradication program and the last vestiges of this disease, we must not become complacent or initiate a re-direction of funds before reaching our goal.

**Tuberculosis:** Due to the increasing incidence of bovine tuberculosis in farmed deer and elk and Mexican cattle imported into the U.S., NCA encourages that an additional \$1 million be appropriated to the existing TB budget to help cover the cost of additional surveillance and testing of livestock and cervidae.

**Tropical Bont Tick:** NCA urges that funds be made available for a pilot program for the eradication of the tropical bont tick from the Caribbean. We recommend that \$2 million be re-appropriated to APHIS and the University of Florida in a cooperative effort to develop and patent a tick decoy system to eradicate the tropical bont tick from the Caribbean.

**Screwworm:** NCA supports the Screwworm Eradication Program. Recent outbreaks in Mexico underline the importance of the program and APHIS plans to move eradication efforts further south.

**Animal Damage Control:** NCA supports the appropriations for the Animal Damage Control (ADC) program. NCA is hopeful that the funds will be used to improve the program's field force and its ability to deliver services to the livestock producers. Recently the cost of meeting the requirements of the National Environmental Policy Act (NEPA) have placed additional burdens on this small but important program. This has significantly reduced ADC's ability to protect agriculture resources. Technical Assistance, research and cooperative programs to reduce agricultural losses caused by predatory animals, birds and rodents are extremely important to livestock producers.

**Scrapie:** NCA supports the efforts of the sheep industry to eradicate scrapie through certifying scrapie-free flocks and an incentive depopulation program.

#### **Food Safety Inspection Service (FSIS)**

NCA is very supportive of meat inspection reform and the research needed to make it a reality. We applaud Secretary Espy's initiative to establish a meat inspection system based on scientific analysis, including the Hazard Analysis of Critical Control Points (HACCP).

NCA opposes the imposition of user fees for federal meat inspection programs. We contend that programs mandated by law to be conducted on behalf of the public benefit should be funded with public monies. Packing plants that traditionally incorporate an eight hour, second scheduled, approved shift should not be subject to pay the cost of inspection services.

#### **AGRICULTURAL MARKETING SERVICE (AMS)**

Easy access to available price and volume information by producers is critical for maintaining a competitive, free-market system. NCA supports AMS efforts to increase reporting of contracted and formula priced cattle consistent with changing production and marketing procedures in the industry. NCA encourages AMS to continue increased efforts to expand verified reporting of boxed beef sales and to begin reporting a price (or index) for Boxed Beef Carcass Units (BCU's).

#### **Packers and Stockyards Administration (P&SA)**

NCA supports the Administration's proposal to increase P&SA funding to levels consistent with continuing the responsibility for ensuring that livestock markets are free from unfair or deceptive practices.

#### **ECONOMICS** **Economic Research Service (ERS)**

NCA supports an appropriate budget for ERS. Current, relevant and unbiased research is critical to the entrepreneurial producers' financial survival in an evolving economic environment.



National Agricultural Statistics Service (NASS)

The beef cattle industry is the largest sector of U.S. agriculture. Continued improvements in accuracy and allocation of resources toward livestock reports are crucial to cattlemen making major business decisions.

**INTERNATIONAL PROGRAMS**  
**Foreign Agricultural Service (FAS)**

NCA recognizes the many good programs undertaken by the FAS that enhance our ability to export our products.

We request that the current FY93 funding level of \$54.9 million be maintained for the Foreign Market Development Cooperator Program and \$147.7 million for the Market Promotion Program (MPP). The beef industry has been a beneficiary of these programs through the U.S. Meat Export Federation (USMEF). Exports of beef have increased significantly in recent years to Japan and now Korea. The USMEF has many effective market development and promotion programs in these countries, funded by Cooperator, MPP and private sector funds.

## NATIONAL CENTER FOR RESOURCE INNOVATIONS

### STATEMENT OF MARGARET STEWART MAIZEL

We appreciate this opportunity to present testimony to the Senate Appropriations Subcommittee on Agriculture, Rural Development, and Related Agencies.

*Background* - The National Center for Resource Innovations is a private not-for-profit organization established with bi-partisan support by Congressional appropriation through the U. S. Department of Agriculture in 1990. The unique mission of NCRI is -- through a current network of six regional technology transfer centers -- to provide collaborative and innovative transfer of geographic information systems and related technologies to support local government and other public policy development and decision making.

*Coordination* - NCRI is coordinated through its National Office staff by an eight-member Board of Directors, six members of which are from project sites and two of which are non-project site Directors with extensive backgrounds in public policy and service.

*Funds and development* - The House and Senate conferees provided \$500,000 in 1990 to CSRS/USDA for the establishment of regional centers for the Chesapeake Bay region, at NCRI's National Office in Rosslyn, Virginia which coordinates NCRI's program; at the South Georgia Regional Development Center, Valdosta, Georgia and at the University of Arkansas, Fayetteville, Arkansas.

In FY '91 two new sites were added with funding of \$774,000 through CSRS/USDA. They are Central Washington University, Ellensburg, Washington and the University of North Dakota, Grand Forks, North Dakota. The University of Wisconsin-Madison was added as supported by parallel funding through CSRS. In FY '92 and '93, funding in the amount of \$1.0 million was provided in both the House and Senate for NCRI and a separate amount of \$75,000 was provided for the University of Wisconsin-Madison identified as the 'CONSOIL' project.

In this testimony, NCRI is pleased to document its impressive accomplishments and plans for meeting its mission to improve the sustainability of irreplaceable rural natural and cultural resources through better public policy. Though our realistic program needs are on the order of \$3.45 million in FY '94, a minimum in federal funding of \$1.8 million in FY '94 is needed to support this critical program. *Part of these funds will be allocated based on a merit review process.*

*Geographic Information Systems: Technologies for Today and the 21st Century.* As you know, GISs are computer-based technologies including hardware, software and graphics capabilities that can be used to encode, analyze and display information related to natural resources, property boundaries and socio-economic variables among many other subjects. Of critical importance is the information systems they use for analyses. For local governments, these systems depend almost entirely on highly cooperative and collaborative efforts by educators, scientists, technologists, and yes, even artists. By design, they must address the public policy

process. To be effective they must be built as educational tools that can be used for describing decision making rationales not only to policy makers, but also to the general public.

They can be used to locate areas with a high probability for pesticide and farm chemical leaching beyond the root zone, to model social and economic parameters of rural communities and farm systems, to describe sensitive ecological areas and their spatial relationships to land using activities, to model effects of storms and plan emergency services, and to help farmers and agencies make optimal decisions regarding program targeting and assessments that will improve farm operations and impiement conservation programs.

*Interfacing between academic centers and federal agencies for technology development and delivery.* NCRI strongly supports the concepts of shared data layers in cooperative, comprehensive information systems that are now possible with advanced information systems technologies. Working jointly with the university world where education and technology development are priorities and with federal agencies where large capacity, field level, information systems are developed, NCRI focuses these resources to serve the public policy maker and his/her community at all levels.

While project sites develop data bases and information systems in collaboration with federal and state agencies, the unique structure of NCRI enables this consortium to facilitate technology transfer and problem-solving approaches between its regional project sites as well as within the "vertical" technology transfer and delivery network that operates locally. Institutional structures, regional information and policy issues will nevertheless vary with local priorities and needs. This is decidedly an asset and speaks to the fact that though confronted with similar resource issues, the answers are best addressed within contexts of local people, available technology and institutions.

*Institutions, Policy Objectives and Implementation Approach.* NCRI's Chesapeake Bay Project -- co-located with the National Office, addresses the objectives of the Chesapeake Bay Restoration Act of 1993 to protect the Chesapeake Bay as an example of one of the most critically important estuaries in the nation. NCRI's Chesapeake project is designed largely as a research and technology transfer program to implement GIS methodologies, federal and state cooperative efforts and shared integrated information systems that can support the sustainability of the Chesapeake Bay's watershed encompassing 42 million acres of land and associated resources in parts, or all of six states. The GIS is a dynamic, layered information system comprised of national, regional and local perspectives. It is being built in response to various needs including, but not limited to comprehensive and coordinated information about agricultural and forest resources, water, soil and air, urban lands and population growth, important habitat areas, unique and scenic areas and other sensitive resources in the Chesapeake Bay watershed.

The project's national GIS framework has used the *invaluable National Resources Inventory-SOILS data bases of the Soil Conservation Service/USDA*, with pesticides use data on 25 specific crops associated with 2,000 soils in the nation and national precipitation information. With SCS, the Economic Research Service/USDA

and Texas A&M University's Blackland Experiment Station, NCRI has identified areas of the country where ground water is likely to be most vulnerable to farm chemicals.

These techniques and other indexes are transferrable to regional assessments where they can be examined in more detail. The Chesapeake GIS is addressing ground and surface water impacts of sediment, from nutrients and other farm chemicals, on the land and water resources of the Bay. Current and founding cooperators are the State Conservationists of the Soil Conservation Service/USDA in Maryland, Virginia, Pennsylvania, New York, Delaware and West Virginia; the state agencies and land grant universities who are their cooperators; ERS/USDA and the U.S. Geological Survey Division of Water Resources, Department of the Interior. NCRI has also been cooperatively supporting a local GIS project in Lebanon County, through the Pennsylvania Conservation Commission, where the Conservation District has assisted the county in implementing a ground water protection ordinance among other conservation policies.

NCRI's program in Georgia is an integral component of the South Georgia Regional Development Center (SGRDC) -- a regional planning agency that supports a ten-county region in the Suwanee river basin on the Florida border with planning, economic development and administrative support. NCRI's primary objective is to encourage ecologically responsible economic growth in the region. Here, NCRI is addressing policy mandates by the State of Georgia that require the development of comprehensive plans using GIS technologies for growth management and tax revenue recovery for local governments through timber taxation at harvest.

In Georgia, the SGRDC has opted to integrate satellite imagery with TIGER files of the U.S. Bureau of the Census for regional planning for forest timber tax revenue recovery. In collaboration with the Geodetic Advisor program of the National Geodetic Survey/NOAA, they are using Global Positioning Systems to assist them in building precise regional data bases. A larger scale local GIS in Valdosta is also being developed.

NCRI's program at the University of Arkansas, Fayetteville, is a component of a large effort, the Center for Advanced Spatial Technology (CAST). Here, NCRI is concentrating on technology development and training of state, university and local personnel. Small-scale demonstration and educational projects that can illustrate the value of GIS to state and local officials for local ordinances including landfill siting, ground water vulnerability estimates for program targeting by watershed, fire protection and mapping of forest resources are a primary focus of the program.

NCRI in Arkansas has developed 25 statewide data layers that are available to everyone by electronic linkage and other means. Projects with the Fish and Wildlife Service, U.S. and the Civil War Battlefield Protection Program of the National Parks Service, U.S. Dept. of the Interior are enhancing information systems for Battlefield protection and ecosystem delineations within the state. Pilot projects in Washington county are being used as educational projects to demonstrate the technology to others.

NCRI at the University of North Dakota is housed at the Institute for Earth Systems Sciences which also incorporates Atmospheric Sciences, Space Studies and the Department of Geography. NCRI's interdisciplinary research is supported at the Institute by the Center for Aerospace Sciences' Scientific Computing Center which houses a CRAY X-MP supercomputer and the Regional Weather Information Center. The resource issues in the region are related to the enhancement and protection of farming and ranching which are principal contributors to the region's economy. Here, NCRI is collecting and disseminating complex and changing regional climate and weather information as it affects aquifers, soils, demographics and land use in the region for use by federal and state agencies and farmers.

NCRI at the University of North Dakota has been cooperating with the National Weather service for radar-based weather and statewide precipitation data with remote sensing data from NASA to estimate "greenness" for range fire prediction models. These models will support state agencies among others. A computer platform to describe real-time weather information for future merger with standard GISs has been developed. NCRI is also assisting Grand Forks County in developing a GIS-based emergency planning system.

NCRI at Central Washington University has been concentrating on technology transfer to several local governments by working in the Yakima and Columbia bio-region to build technical understanding and broaden educational efforts about applications of GIS in local governments and at the state level.

Contacts have been made with the Soil Conservation Service for assistance with soils information and relationships with the State Geographic Information Committee extended to enhance representation and understanding of the needs of local governments in central and eastern Washington state. Here, NCRI is concentrating on grassroots level collaborations with many counties in the Columbia, Yakima and Coeur d'Alene, Idaho bio-regions. Regional data base development by the GIS laboratory including satellite imagery and digital elevation data as well as forest (old growth) and other wildlife habitat information has continued.

NCRI at the University of Wisconsin-Madison has a long-time, successful history of delivery of GIS technologies to local governments. Here, the institutional issues surround cooperation between federal agencies -- the Soil Conservation Service, Agricultural Conservation and Stabilization Service, and one-stop conservation planning through local Soil and Water Conservation Districts and local units of government. Local governments are encouraged to cooperatively develop local GIS for farm and environmental resource conservation policy implementation. NCRI in Wisconsin continues a tradition of state level support for GIS-based comprehensive planning through land transfer taxes and state-level Land Information Systems policy development.

*Coordination, Collaborating and Technology Exchange between Sites.* NCRI project sites are networkers -- collaborating with each other -- as well as outside programs for problem-solving and technical assistance.

In the later summer of 1993, the NCRI Board of Directors will sponsor a joint workshop with the University of Wisconsin and the Chesapeake project for



cooperative technology transfer with SCS to each project site. Central Washington has assisted Georgia in acquiring remote sensing and software training. Cooperative projects to incorporate weather with physical and socio-economic data in the upper midwest are being developed by the University of North Dakota, the University of Wisconsin and the Chesapeake Project. The Chesapeake project has assisted the Economic Research Service/USDA in building a GIS at USDA for national and global economic and resource issues and will share its national GIS with the University of Michigan and the Economic Research Service to mutually explore Farm Policy issues for the 1995 Farm Bill. These policies could be tested within NCRI's project areas. The Georgia project site is looking south to the Suwanee River Basin Water District in Florida in order to share information about their common resources and Arkansas has invited the Chairman of the Wisconsin Land Information Program to a conference they are sponsoring this summer -- and these are only a few examples!

All of NCRI's project sites are networkers -- building electronic access to data bases for all users within their regions and sharing information between sites and extending outreach efforts include workshops with 'take-home' workbooks, newsletters, press articles, plans for video productions, papers, presentations and poster sessions at national and international meetings. The University of North Dakota is using weekly weather reports on their local TV station to talk about GIS applications and promote understanding in the region about NCRI's mission.

Funding in FY '94 will enable us to continue this valuable and good work. Until now, most sites and the National Office have been concentrating on establishing programs and data bases in cooperation with federal and state agencies. The development of meaningful, policy-oriented information systems is just beginning for many sites. We look forward to expanding this current stage of our work with future funding and to address innovative and relevant resource policy sustainable resources. Yet to come is the important implementation of GIS and associated technologies as effective educational tools about the environment for the general public.

Funds for FY '94 in the amount of *\$1.8 million* will allow NCRI to continue to meet its very large mission. Nearly every project site has been able to match funding provided by the committee. This one-of-a-kind program with a giant, critical mission with adequate support has the potential to meet the administration's stated priorities to enhance technologies for better public policy and sustained natural and cultural resources in rural areas.

Thank you again for your kindness and for this opportunity to submit testimony.

Sincerely,



Margaret Stewart Maizel  
NCRI-Chesapeake

## NATIONAL COOPERATIVE BUSINESS ASSOCIATION

## STATEMENT OF RUSSELL C. NOTAR, PRESIDENT AND CEO

The National Cooperative Business Association endorses and supports the statement of the National Cooperative Rural Development Task Force relative to funding for the national demonstration project on regional cooperative development centers.

NCBA supports increasing funding for Fiscal Year 1994 to the \$5.1 million level ... roughly 10 percent of the authorized level. Cooperatives across America have pledged matching funds for that spending, and it's time to put that capital to work in our rural areas. NCBA and its members actively supported passage of the Rural Development Act as part of the 1990 Farm Bill, and we established the National Cooperative Rural Development Task Force to pursue the establishment of the regional centers.

We understand and support the need to constrain spending in order to reduce the nation's budget deficit and the national debt. However, we strongly support President Clinton's call for redirecting federal spending into programs that represent an "investment" in America, and we consider the establishment of these centers to be a prime example of federal investment that will pay many dividends over the years to come. A coordinated, cooperative approach to rural economic development will generate business activity and income that will raise federal revenues and pay back this relatively small federal outlay many times over.

Cooperatives are, by their very nature and structure, ideally suited as effective tools for economic development. Because they are "member driven" -- managed by a board of directors elected by the total membership of the cooperative on a one-person, one-vote basis -- cooperatives guarantee the active participation of the local community that is seeking to spur economic development.

Because their primary purpose is to provide services desired by the members who join together to form the cooperative, they are able to accomplish goals that another company, driven by the need to maximize income, cannot. Revenues generated by cooperatives are put to providing services to the members or are returned to the members in the form of dividends.

The National Cooperative Business Association has assumed the mission of strengthening and expanding the cooperative form of business. NCBA takes that mission seriously, and seeks to promote the use of cooperatives as an ideal part of any economic development efforts.

The National Cooperative Business Association (NCBA) is a national, cross-industry membership and trade association representing cooperatives--over 100 million Americans and 45,000 businesses ranging in size from small buying clubs to businesses included in the Fortune 500. Founded in 1916 and known for many years as the Cooperative League of the USA, NCBA's membership includes cooperative businesses in the fields of housing, health care, finance, insurance, child care, agricultural marketing and supply, rural utilities and consumer goods and services as well as state and national associations of cooperatives.

NCBA represents cooperatives before Congress and the federal agencies and promotes and supports cooperatives in the U.S. and overseas through training and technical assistance publications and programs.

# STATEMENT OF THE NATIONAL COTTON COUNCIL OF AMERICA

## SUMMARY OF SELECTED REQUESTS

- ARS**     Value added textiles -- Increase ARS budget \$1,500,000 for research on value added textile products and quality at New Orleans, LA and Clemson, SC.  
Germplasm enhancement -- Increase ARS budget at College Station, TX by \$100,000 for germplasm enhancement.  
Sweetpotato whitefly (SPW) -- Increase ARS budget \$1,900,000 for Research and Action Plan for SPW.
- ES**     GOSSYM/COMAX -- Maintain ES budget for Gossym/Comax Information Unit at Mississippi State at \$500,000.
- APHIS**   Boll weevil eradication -- Request \$13,600,000 for containment, eradication and methods development in CA, AZ, TX, VA, NC, SC, GA, FL, AL, TN and MS.
- Pink bollworm -- Request \$2,623,000 for pink bollworm containment, survey, quarantine, rearing equipment and support of an area wide trial in southern California.
- Sweetpotato whitefly -- Request to maintain \$3.5 million to accelerate development of biological control programs to control the sweetpotato whitefly.
- FAS**     Request funding at not less than FY93 levels for FAS, FMD, MPP, GSM, PL-480 and COAP programs.

The National Cotton Council is the central organization of the U.S. cotton industry, representing growers, ginner, cottonseed crushers, warehousemen, merchants, cooperatives, and textile manufacturers from California to the Carolinas. At the Council's annual meeting, the 300 delegates selected by 90 organizations endorsed expanded research, education, market development and action programs designed to increase competitiveness of U.S. cotton. Delegates also asked for research to solve environmental problems, calling for new methods to control pests, manage crops and conserve resources. They also support efforts to assure a wholesome and safe food and fiber supply.

The National Cotton Council recognizes that our country is confronted with a budget deficit so large that it threatens the nation's economic viability. We know that Congress must make some difficult choices about the allocation of resources. While we endorse efforts to bring the deficit under control, we would observe that agriculture has already taken larger funding cuts than other segments of our economy; now, agriculture is being asked, again, to take larger cuts than other segments. Since 1987, for example, the number of agricultural research scientists has been reduced by 20% and the current budget resolution would result in an additional 6% attrition in staff for agricultural research through 1998.

We feel strongly that research, extension, and action program funding is a competitive necessity representing a sound national investment. This will be true in spades if GATT, NAFTA, and subsequent international trade agreements substantially liberalize trade, as

expected. In this regard, we are recommending several adjustments in USDA's proposed FY94 budget.

## SCIENCE AND EDUCATION

Total funds for USDA research, education and related programs are proposed to be increased about 1.2% for 1994. These slight increases are in sharp contrast to the total needs for research and educational needs for agriculture.

### **Agricultural Research Service**

The Agricultural Research Service (ARS) is proposed to receive a cut of more than 4%. While recognizing most of the reduction is in allocation for buildings and facilities, the request for research operations is increased slightly. This funding level does not provide adequate funds for meeting many new challenges in spite of aggressive redirection within the agency. We recommend additional funds to meet several major problems.

Sweetpotato Whitefly (SPW) For several years we have voiced alarm about the impending agricultural crisis caused by the SPW. Pest levels have increased annually to the point that in some parts of CA, AZ and TX, the potential for losses from this pest are of disaster proportions. Additionally, many of cotton's major markets are seriously threatened because of insect sugar on lint which makes it unsuitable for spinning. We have worked closely with USDA agencies on development of a master plan of research and action for the SPW. The plan calls for a multi-disciplinary approach involving state and federal agencies. The ARS has redirected funds from other programs, however further redirection is not plausible. ARS is in need of an increase of \$1,900,000 in FY94 to bring the ARS funding to \$3,700,000.

Value Added/Quality Research Continuing competitiveness depends not only on efficient production but on efficiencies in value-added processes as well. ARS utilization labs have been forced to sharply reduce staffs and program support due to limited budgets. Therefore, we request an increase of \$1.5 million in the ARS budget to be allocated to laboratories at New Orleans and Clemson, SC. Funds will be used to accelerate research to: (1) develop processes to use sticky cotton, (2) improve durability and color-fastness of cotton products, (3) develop measurements to evaluate spinning utility of fiber, and (4) determine processes to eliminate dye defects.

Cotton Germplasm The U.S. cotton germplasm collection is maintained at the ARS Southern Crops Research Laboratory in College Station, TX. This collection serves researchers nationwide. Genetics research is needed to reduce chemicals, improve quality and boost productivity. We request an increase of \$100,000 in FY94 for application of the newest biotechnologies to cotton and for evaluating enhanced germplasm in summer and winter nurseries.

### **Cooperative States Research Service (CSRS)**

We support the IPM Special Grant (P.L. 89-106 Budget Line) program requested by CSRS because it will provide the opportunity for state scientists to seek funding to develop integrated pest management programs for the sweetpotato whitefly and other insects. The requested amount is \$7 million, up from \$4.457 million in FY93.

National Research Initiative (NRI) The NRI is slated for an increase from \$97.5 million to \$130.2 million in 1994. While we favor any increase which will boost basic research and fundamental knowledge of biological systems, it is important to note that



we also favor increases in Hatch and other core programs. While competitive grants research programs provide basic building blocks for new technologies, the core programs of the state agricultural experiment stations and the ARS provide the essential "cement" to bring building blocks to full fruition. We hope that this committee will continue to consider all avenues of agricultural research funding.

#### **Extension Service**

Gossym/Comax Information Unit (GCIU) The GCIU headquartered at Mississippi State, MS is currently funded from ES at level of \$492,000 annually. It assimilates research findings into computer crop models and it also provides training and distribution of programs to users. Gossym/Comax is the most advanced computer assisted crop growth models in the world. A study team consisting of federal, state and industry specialists have made several constructive recommendations which will be incorporated into 1994 operations. FY94 represents a critical year for the GCIU and we therefore request that ES funds for the GCIU Information Unit be provided at the original budgeted level of \$500,000. 1994 is the fifth year of the 5-year pilot project.

Extension Pest Management and Pesticide Impact Assessment Programs We support the USDA requests for the Extension Pest Management programs and Pesticide Impact Assessment program at \$8.6 million and \$3.4 million, respectively.

### **MARKETING AND INSPECTION SERVICES**

#### **Animal and Plant Health Inspection Services**

Action programs carried out by APHIS are of special importance to the cotton industry because of their potential to eliminate boll weevil and pink bollworm as pests of U.S. cotton.

Boll Weevil Eradication Almost 1 million acres of cotton in 6 southeastern states are now free of the boll weevil. The boll weevil eradication program has solidly demonstrated environmental and economic benefits. Cotton growers have reduced their pesticide use by 70% and entire communities have been revitalized. We are requesting FY94 appropriations of \$13,600,000 for APHIS's share of boll weevil eradication and suppression programs. Of this amount, \$1,020,000 will be needed for the Texas/Oklahoma High Plains Boll Weevil Containment Program, \$880,000 to protect the eradicated areas of Arizona and the desert valleys of California and the remaining \$11.7 million will be used for the Southeastern Boll Weevil Eradication Program.

Funding for the federal 30% share in the Southeastern U.S. include costs of confirmation phase in GA, Southern AL, and FL; containment costs in VA, NC, and SC; and for expanding into Central and Northeast AL and Northwest GA. This request also includes funds in anticipation that growers of Northwest AL and Middle TN will request inclusion in the eradication program.

**Geographic Information System:** As future expansion areas are considered, improved methods incorporating computer technologies are needed. We are requesting that of the total request up to \$455,000 be used for APHIS methods development activities to support the second year development of a pilot Geographic Information System (GIS) in the state of Mississippi.

**Carryover Funds:** Because of limited expansion into new areas in 1993, funds identified for expansion activities will be carried over into FY94 under no-year funding



authority given to the USDA/APHIS boll weevil program by OMB. This carryover amount, \$1.5 million, will give the program flexibility for sound management decisions.

Pink Bollworm Suppression Our FY94 request for \$2.623 million for pink bollworm funding represents significant progress at developing the technology and physical facilities to begin wide area trials to demonstrate the technology to eradicate the pink bollworm from the U.S. This request is less than the \$2.95 million provided in 1993. Of the total request, \$1.45 million will be needed to continue APHIS participation in the San Joaquin Valley suppression program and survey and regulatory activities in other regions, \$328,000 to complete the move to the new moth rearing unit in Phoenix and \$845,000 to conduct a wide area trial of up to 20,000 acres in the Colorado River Valley of southern California.

Sweetpotato Whitefly We support the USDA request for \$3.5 million for APHIS to conduct survey and action programs to combat the whitefly. We support those efforts and recommend APHIS continue to coordinate their efforts with the National Research and Action Plan for the SPW.

### AGRICULTURAL WEATHER SERVICES

We note that the 1990 farm bill has authorized \$5 million to carry out objectives of subtitle D, cited as the "National Agricultural Weather Information System Act of 1990." We support a nationally coordinated ag weather information system and request funds be appropriated for the Act.

### USDA EXPORT MARKET DEVELOPMENT

On another front, Council delegates resolved to maximize the authorization of funds for foreign market development. Cotton Council International is a cooperator in the FAS market development program. We support funding for the Foreign Agricultural Service and Foreign Market Development Program at not less than the levels provided in FY93. In addition to the Foreign Market Development Program, FAS is now administering many programs (such as GSM credit guarantees, EEP, MPP) to help American agricultural products compete in global markets.

Cotton Council International is also a participant in the Market Promotion Program (MPP). The MPP program is authorized at \$200 million per year. This program is proving to be very valuable in expanding exports of value-added and bulk U.S. agricultural products. Almost every U.S. agricultural product category participates in the program. Its MPP resources have already been reduced in the re-authorization process. We strongly support funding this program.

We support funding for continuation of GSM and PL-480 programs as they are important market development and maintenance tools. We are deeply concerned by the adverse impact of recent marketing practices of the cotton-producing republics of the Former Soviet Union. We urge all U.S. government agencies and the Congress to be mindful of the impact their practice of "fire-selling" cotton at well below world prices has had on the U.S. cotton industry and CCC price support programs.

Cottonseed products are important income-producers for farmers, ginners, and oil mills. We support funding for the Sunflower and Cottonseed Oil Assistance Program (SOAP) and (COAP).

## SUMMARY

We are appreciative of continuing support for agriculture, research, education, action and market development programs and are encouraged with the progress made in recent years for decreasing costs, improving quality, and addressing environmental concerns. These strong national programs will be absolutely vital instruments for survival in the increasingly competitive global environment portended by GATT and NAFTA. We also want to record our strong opposition to means-testing or placing further limitations on farm program benefits.

## NATIONAL COUNCIL FOR AGRICULTURAL EDUCATION

STATEMENT OF DR. THOMAS GARRISON, VOCATIONAL  
DIRECTOR, SOUTH PUTNAM SCHOOL DISTRICT

Mr. Chairman and members of the Committee, I am Dr. Tom Garrison, Putnam County Area Vocational Director, Greencastle, Indiana. Thank you for providing me this opportunity to present a statement on behalf of The National Council for Agricultural Education (The Council) to request final funding for the current program to "Infuse Aquaculture Education Into Agricultural Education." South Putnam High School is one of six sites chosen by The Council to serve as aquaculture learning centers to test new aquaculture curriculum and provide teacher and student training

We are seeking funding to complete materials development, provide updates and institutionalize the infusion and outreach process. This should be our last request for funding for this aquaculture education program. We respectfully request funding from Congress in the amount of \$1,910,000 be appropriated for the program in 1994. The funds would be utilized in 1994 and 1995 for the fifth and final phase of the aquaculture education program.

Phase V: Serving All Populations/Expanding Outreach  
Efforts/Institutionalizing the Program

After a national competition, one aquaculture learning center will be chosen to become the national training center for secondary aquaculture education and will host secondary teachers from all 50 states on a regular and on-going basis to receive training on the curriculum, species specific instruction, recirculating systems and other newly developed or modified teaching materials.

The other learning centers would also receive support to enable them to better meet the training needs of the states in their geographic region. All would institute programs for minority audiences, work with inner city school students, update testing equipment, develop technology transfer programs and test newly developed material.

Funds would be used to produce consumer information on aquaculture, which has been requested by aquaculture industry, and to print and distribute another 2,500 copies of the core curriculum. We would complete the development on the sustainable agriculture and biotechnology materials and provide additional materials revisions and updates as well as monitor the success of the program.

Please allow me to digress and explain the program more fully. We are particularly proud of our program in Indiana and believe we have one of the truly outstanding aquaculture teaching facilities in the United States and the world. The Indiana program is unique as the facility contains approximately 6,000 square feet of space and houses several very large recirculating production agriculture systems with the latest computer monitoring and control technology.

Additionally, the facility is designed to serve as a laboratory for English, math, chemistry, physics, computer science, biology, and general science. The aquaculture laboratory is available for every teacher in the school to use. The facility is so noteworthy it has been visited by members of Congress, the Governor and Lt. Governor of Indiana, our state superintendent of public instruction, other state government officials, visitors from nine foreign countries and thousands of elementary, secondary and college students. The facility has already been used to conduct teacher training programs.

The Council funds are a small, but integral part, of the support given to the Indiana facility. For instance, using only \$40,000 in Federal funds through The Council we were able to leverage over \$750,000 in state and local funds for our aquaculture education program. Obviously, we have made significant investments South Putnam in hardware and facilities and in the education of our students..

This combination of using Federal dollars to leverage state and local funds to teach science and math through aquaculture is not unique with South Putnam. To varying degrees, the Aquaculture Learning Centers supported by The Council in Iowa, Pennsylvania, South Carolina, Texas and Washington have all relied on a mix of Federal, state and local funding to make the programs successful. This is as it should be.

I would like to recap the total program as supported by Congress:

#### Phase I: Research

A 1989 study by The Council, funded by grants from the Appalachian Regional Development Commission and the U. S. Department of Agriculture (Soil Conservation Service, Cooperative State Research Service, Cooperative Extension Service), assessed existing aquaculture curriculum internationally and recommended the creation of new, comprehensive aquaculture instructional materials in the U. S. for use in secondary and post secondary agricultural education programs.

#### Phase II: Curriculum Development and Testing

In 1990, Congress, through USDA's Office of Higher Education (CSRS), began funding a multi-year project to: develop curriculum and support elements, field test content, and supply national teacher training on the materials.

In 1991, utilizing the new instructional materials, schools in Texas, Iowa, Indiana, South Carolina, Pennsylvania and Washington were selected to field test the curriculum and become aquaculture learning centers. They completed the field tests January, 1992.

#### Phase III: Nationwide Outreach and Training

August 11-16, 1992, teacher teams from all 50 states received training in Raleigh, North Carolina on how to teach the material to students and to other teachers. Additionally, a recirculating systems manual was developed and instructors explored the model classroom recirculating system designed and built in cooperation with North Carolina State University. Recirculating systems are useful in classrooms to teach the dynamics of animal husbandry and water quality. The Cooperative Extension Service was a key player in this

conference. This technical training on the recirculating system will help Extension aquaculture specialists around the country trouble-shoot systems as they are adopted in other secondary and post-secondary institutions, and as they become commercially viable in industry.

Some 2,000 copies of the 1,100 page, five volume, core curriculum and support materials were sent to all states fall 1992. States are replicating The Council training program at their own teacher workshops in 1993.

Phase IV: Creating and Testing Additional Resource  
Materials, Regional Outreach

In 1993 The Council is utilizing Federal funding to complete and field test 16 species specific curriculum modules--catfish, tilapia, shellfish, striped bass, salmon, trout, sturgeon, yellow perch, carp, baitfish, walleye, redfish, crayfish, shrimp, tropicals/ornamentals, aquatic vegetation--and the recirculating systems manual, support additional regional inservice training, design outreach programs to reach culturally diverse audiences, and begin to develop units on biotechnology and sustainable agriculture as they relate to aquaculture.

Results at the six test sites include a 50-400 % increase in students applying to study aquaculture and the integration of math and science into the aquaculture curriculum with the cooperation of teachers in other disciplines. Graduates of the secondary aquaculture education programs have practical and theoretical experience, addressing the need for competent, trained entry level employees. However, more importantly, studying this curriculum also encourages students to pursue post secondary study in aquaculture or other areas of environmental or earth science.

Additionally, because of the hands-on nature of the aquaculture curriculum and the suggested teaching methods, we are finding that students of all ability levels are meeting, and in many instances, surpassing the requirements of the instructional program. Students who were disinterested in formal education, are now eager to attend school to participate in the aquaculture program. Meanwhile, gifted and talented students become involved in independent research and study in aquaculture.

Also, this program has increased the level of cooperation between aquaculture specialists of the Extension Service and secondary agricultural education teachers. Adults will also benefit from the new knowledge in our secondary agricultural education programs and Extension agents will be better able to serve their primary customers.

We wish to thank the Committee for your continued support of this exceptional opportunity, through The Council, to encourage and develop the teaching of aquaculture in our public schools. Your enthusiastic endorsement is the reason why we are enjoying success today. We again thank the chairman and the committee for this opportunity to present our statement and urge favorable consideration.



## STATEMENT OF THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

The Diagnostic Imaging and Therapy Systems Division of the National Electrical Manufacturers Association is pleased to provide testimony on FY 1994 funding levels for the Food and Drug Administration. NEMA, with headquarters in Washington, D.C., represents more than 95% of U.S. manufacturers of x-ray imaging, computed tomography, magnetic resonance imaging, diagnostic ultrasound, and nuclear imaging equipment. In addition, the division represents manufacturers of picture archiving and communications systems, as well as manufacturers of extracorporeal lithotripters and radiation therapy equipment.

Before offering specific comments on the FY 1994 funding levels for the Food and Drug Administration, NEMA wishes to express its deep concern regarding continued decreases in the number of product approval applications approved by FDA per year. Over the past several years, the number of product approval applications submitted to the agency has increased, whereas the number of new product applications approved by the agency has decreased. The result has been a significant backlog in the number of 510(k) and PMA submissions pending before the agency, and diminished patient access to new and beneficial health care technologies.

With respect to 510(k) approvals, which provide the route to market for incremental changes in existing medical technologies, FDA reports a significant increase in the number of 510(k) submissions pending more than ninety days, from two submissions in November 1991 to seven hundred thirteen submissions in November 1992. Moreover, the number of pending original 510(k)s has nearly doubled from 2,444 in November 1991 to 4,265 in November 1992. Similarly, the total number of completed pre-market approvals (PMAs) for breakthrough devices has continued on a steady downward trend from almost fifty per year during the late 1980's to twenty-seven per year in 1991, to only twelve in 1992. We consider this situation to be unacceptable, and we believe that it must be remedied immediately.

NEMA recognizes that there are those who would argue that the only solution to this backlog in product approvals lies in the form of user fees to be assessed from the medical device industry. We take exception to this point of view. Rather, NEMA maintains that the current backlog in PMA and 510(k) submissions is attributable to a lack of appropriate funding for FDA operations and inadequate management of existing resources. With respect to the latter point, NEMA stands ready to work with members of the subcommittee and the agency towards the more effective management of FDA resources. We anxiously await the release of a forthcoming report prepared by the Subcommittee on Oversight and Investigations of the House Energy and Commerce Committee outlining proposed changes in the management of FDA's Center for Devices and Radiological Health, and look forward to working with agency officials towards the implementation of the report's recommendations.

In addition to the difficulties encountered by FDA in the management of its existing resource base, NEMA believes that much of FDA's current resource dilemma is attributable to a shortfall in FDA funding in the face of new statutory mandates. As the Advisory Committee on the Food and Drug Administration noted in its May 1991 report, "The FDA has been placed in an almost untenable position in the past decade as Congress has relentlessly added new responsibilities without providing the resources to carry them out...Alarming, the Agency faces challenges ahead that are likely to be even more dramatic than those that have already occurred." For example, for FY 1993, the Bush administration requested an

appropriation of \$797 million for FY 1993 operations, a funding level consistent with current operating expenditures and not allowing for any program increases. As a result, while the \$780 million appropriation that FDA received for FY 1993 represented a \$32 million increase over the FY 1992 appropriation of \$748 million, it did not allow FDA to maintain current operations, and it did not take into account FDA's new statutory responsibilities stemming from the Safe Medical Devices Act.

FDA estimates place the cost of implementing the Safe Medical Devices Act at \$26 million, or 300 FTEs. Thirteen million dollars or fifty FTEs are estimated for the implementation of the Mammography Quality Standards Act. NEMA requests that the subcommittee, in considering the FY 1994 FDA appropriation, provide the resources necessary to meet these statutory mandates.

While we do not dispute the contention that the Food and Drug Administration needs additional resources, we dispute the notion that user fees would lead to increased efficiency in FDA operations. With respect to the user fee revenue which would have been assessed from medical device manufacturers, FY 1993 FDA budget estimates placed user fee revenue from new device applications at 6.8 million. By contrast, actual program increases for new device review were estimated at only 1.4 million. This means that 80% of the user fee revenues collected from device manufacturers would have been applied to areas other than expanded device review efforts. Thus, had the FY 1993 user fee proposal been enacted, it appears as if device manufacturers would have seen only a small fraction of the revenues expended on FDA user fees translated into expansions of device review activities.

Additional uncertainties persist as to how a user fee proposal would be implemented. Absent relevant authorizing legislation from the administration, it is difficult to arrive at an adequate assessment of the extent to which the benefits associated with user fees will exceed the costs. The most recently discussed proposals have been predicated upon a hybrid system consisting of product approval fees, facility registration fees, product listing fees, and import assessments. NEMA believes that these proposals raise a number of unanswered questions. Chief among these are questions of equity, scope, collection, administration, compliance, and allocation within various FDA functions. The potential for multiple assessments under such a hybrid system abounds, as firms will be asked to continue to pay fees on thousands of products long after they have been evaluated and approved. The deleterious impact of this scheme of incremental taxation is readily apparent. At a time at which U.S. industry is struggling to maintain its competitive posture, the wisdom of such a tax on innovation is at best questionable.

NEMA is aware that legislation was enacted in the last Congress which would impose user fees upon the pharmaceutical and biotechnology industries. NEMA believes that this legislation should be given the chance to work before additional discussions regarding the assessment of user fees from the medical device industry are initiated. At this juncture, it is simply premature to begin a meaningful discussion as to the utility, in a practical sense, of medical device user fees.

Finally, NEMA is aware that the Clinton administration has proposed user fees for both the medical device and pharmaceutical industries for purposes of deficit reduction. NEMA remains opposed to the expenditure of user fee revenue for this purpose. NEMA notes the existence of language in the Senate Budget Committee Report for FY 1994 which states that "previously enacted Food and Drug Administration user fees are being used to ensure adequate funding of FDA approval and certification activities, and assumes

that any additional fees which may be enacted will be used for the same purpose." NEMA fully supports the position of the Senate Budget Committee on this matter, and respectfully urges members of this subcommittee to consider adopting similar language.

NEMA appreciates this opportunity to provide testimony on the resource needs of the Food and Drug Administration, and looks forward to working with subcommittee members to find the financial resources which the Food and Drug Administration needs to carry its important work into the twenty-first century.

## NATIONAL NUTRITIONAL FOODS ASSOCIATION

## STATEMENT OF RICHARD MEYERS, LEGISLATIVE DIRECTOR

Chairman Bumpers, Ranking Minority Member Cochran and members of the subcommittee, thank you for the opportunity to present the views of the National Nutritional Foods Association on the implementation of the Nutrition Labeling and Education Act. I am Richard Meyers, the Legislative Director of the National Nutritional Foods Association.

The NNFA is a trade association representing manufacturers, distributors and retailers in the natural products industry. Our members sell whole foods, grains, vegetables, prepackaged products, herbs, and dietary supplements. The approximately 13,000 businesses in our industry generate some \$6 billion annually in revenue, pay hundreds of millions of dollars in wages and most importantly, serve 10 million customers per week.

Our industry is very concerned with the Food and Drug Administration's (FDA) implementation of the dietary supplement portions of the Nutrition Labeling and Education Act (P.L. 101-535). Specifically, we fear that the FDA will promulgate rules that will deny millions of Americans the dietary information they need to improve their health and to help prevent deadly afflictions such as heart disease and cancer. Such an action will cost the nation millions of dollars in health care expenditures which could have been saved through disease prevention.

The NLEA was passed by Congress in 1990 in part, to provide expanded and more accurate information concerning the health benefits of food products and dietary supplements. Under the NLEA, the FDA was directed to evaluate the scientific evidence concerning specific nutrient/disease links to determine if health claims for these relationships were justified. Congress also directed the FDA

to promulgate broad food labeling regulations with respect to both the content of foods and health claims for foods and dietary supplements.

The FDA's proposed NLEA regulations reflected an unduly narrow view of the health benefits that could result from increased use of certain nutrients by an informed population. Health care costs in our nation are more than \$2 billion per day. Yet, FDA continues to lag markedly behind the latest science in terms of promoting prevention as a cost effective means of maintaining wellness.

For example, the Centers for Disease Control and Prevention and the U.S. Public Health Service recently concluded that folic acid supplements, when taken very early in pregnancy, can be important in the prevention of neural tube defects and have recommended the use of folic acid by all women of childbearing age. The Texas State Department of Health is now providing folic acid supplements to women of childbearing age due to the high incidence of spinal birth defects among children born along the Rio Grande. Yet the FDA has rejected this health claim, denying unborn children an important means to prevent birth defects.

Tragically, the FDA has also failed to recognize the link between the consumption of antioxidant vitamins and a reduction in cancer risk despite significant epidemiological evidence of this correlation. Attached to our testimony is a memorandum summarizing a number of recent articles in respected medical journals which document the role of nutrition and supplement consumption in preventive health care.

Moreover, the FDA's proposed regulations, originally to be issued as final on November 8, 1992, rejected several other congressionally identified health claims, including the link



between fiber consumption and long-term colon cancer prevention -- a link that enjoys the near consensus of the scientific community.

Section 403 (r) (5) (D) of the NLEA directed the FDA to promulgate a scientific standard for the evaluation of health claims for dietary supplements. Furthermore, the statute allowed the FDA to craft a more lenient standard than the one used for foods. Nonetheless, the FDA's proposed regulations lumped food and dietary supplements together, under a health claims standard that, as I have pointed out, is far too stringent.

Under the proposed regulations, the FDA would not approve a health claim for a substance in a dietary supplement that contains more of that substance than the amount that is normally found in food. Such a substance is termed to be at a "therapeutic level," yet the FDA regulations did not define such levels. This means that potencies of vitamins, minerals and other supplements may be required to be reduced below useful levels in order for a health claim to be approved. We believe this represents a back door attempt by the agency to undermine Section 411 of the Food, Drug and Cosmetic Act which precludes limits on potency levels of dietary supplements. The regulations also appear to prevent herbal products from making health claims, as FDA has indicated that herbs do not have significant nutritional value.

When the proposed FDA regulations were published in the Federal Register in November of 1991, a strong outcry was heard throughout Congress, not only from the dietary supplement industry but from the tens of millions of constituents who use and enjoy the benefits of dietary supplements.

The FDA has not followed the original intent of Congress in promulgating the regulations. Consumers were outraged that the proposed regulations did not allow substantiated health claims for

supplements so that American consumers could make better decisions about how to maintain their health.

In response to that outcry the Congress enacted a one-year moratorium on the implementation of the NLEA regulations relative to dietary supplements. This moratorium expires on December 31, 1993.

In that Act, Congress directed the General Accounting Office (GAO) and the Office of Technology Assessment (OTA) to issue reports to the Congress. It is unlikely that the 2 reports will be available to the Congress prior to the deadline.

Legislation has been introduced into Congress that will allow substantiated health claims for supplements and will address the matter of improper enforcement against dietary supplements by the FDA. The legislation -- S. 784, the Dietary Supplement Health and Education Act -- includes strong consumer protection against misleading claims.

It is our firm belief that Congress must legislate this matter before the FDA issues final rules on dietary supplement labels.

The "new" proposed NLEA regulations are to be published by June 15, 1993. However, the FDA will not have had time to take into consideration the GAO report mandated by the Congress which, although due by April 30, 1993, apparently will not be ready by June.

Should this legislation not be enacted by the Congress and signed into law by the President prior to December 31, 1993, we believe that it is necessary for the Congress to delay the implementation of the FDA's regulations for one more year. We therefore request that this committee consider legislation that

would preclude the Secretary of Health and Human Services from using fiscal year 1994 appropriated funds to finalize or implement the NLEA regulations as they apply to dietary supplements.

Thank you, Mr. Chairman.

Role of Nutrition in Preventive Health Care:  
Supporting Data

Introduction

Recent research, much of it performed during the past decade, has shown that good nutrition can prevent or delay a number of serious chronic disorders. The Surgeon General's Report on Nutrition and Health, issued in 1988, listed the ten leading causes of death in the United States and described five of them as diet-related. It can readily be seen that improving the nutritional intakes of the American public can markedly reduce the costs of health care- both human and financial.

From literally hundreds of scientific articles we have selected the following to demonstrate the strength and variety of the evidence which supports the potential role for diet and supplements in a total health care plan.

Annotated Bibliography

- \* The data support a role for antioxidants in reducing cancer risk.  
Block, G.  
Nutrition Reviews 50, 207-13 (1992)

In this Science/Policy article Dr. Block advocates approval of a health claim of the general form: "A diet high in antioxidant vitamins may help reduce the risk of some cancers." After discussing the evidence to support this claim she points out the low antioxidant nutrient status of the U.S. population.

- \* Fruit, vegetables, and cancer prevention: a review of the epidemiological evidence.  
Block, G. et al  
Nutrition & Cancer 18, 1-29 (1992)

This article reviews some 200 studies that examined the relationship between fruit and vegetable intake and cancers of the lung, colon, breast, cervix, esophagus, oral cavity, stomach, bladder, pancreas, and ovary. For most cancer sites the lowest fourth of the population (in consumption of fruits and vegetables) have about twice the risk of cancer compared to those with high intakes. The authors conclude: "It would appear that major public health benefits could be achieved by substantially increasing the consumption of these foods."

- \* Vitamin C intake and mortality among a sample of the United States population.  
Enstrom, J.E. et al  
Epidemiology 3, 194-202 (1992)

By analyzing data from a major survey of diet in some 11,350 individuals, this study found that high vitamin C intake, both in food and supplements, reduced mortality rates from cancers, cardiovascular diseases and all causes considered together. An accompanying editorial by Block points out that, "In the United States, plasma ascorbate (vitamin C) levels are disturbingly low in major segments of the population, reflecting equally disturbing low intake."

- \* Dietary calcium and risk of hip fracture: 14-year prospective population study.  
Halbrook, T.L. et al  
Lancet Nov. 5, 1988, 1046-9

An inverse association was found between calcium intake and the risk of hip fracture in a group of 957 Californians. The authors estimate annual costs of \$6 billion in the US related to hip fracture, and state that their results strongly support a protective role for increased calcium intake.

- \* Risk of angina pectoris and plasma concentrations of vitamins A, C, and E and carotene.  
Riemersma, R.A. et al  
Lancet 337 (8732), 1-5 (1991)

In this study vitamin E levels in blood plasma were shown to be inversely related to the risk of angina, with an increased risk in the lowest fifth of the study population almost 3x that of the highest fifth. Inverse relationships between angina and carotene and vitamin C plasma levels were found in smokers.

- \* Association between nutritional status and cognitive functioning in a healthy elderly population.  
Goodwin, J.S. et al  
Journal of the American Medical Association 249, 2917-21 (1983)

This study of 260 men and women above 60 years of age found a correlation between low plasma levels of certain vitamins and poor memory and abstract thinking ability. These subjects were non-institutionalized; similar results might well be expected in institutionalized elderly subjects (cf Bell et al., J. American Geriatric Society 39, 252-7 [1991])

- \* Prevention of the first occurrence of neural-tube defects by periconceptional vitamin supplementation.  
Czeizel, A.E. and I. Dudas  
New England Journal of Medicine 327, 1832-5 (1992)

In this randomized controlled trial a multivitamin/mineral supplement or a trace mineral supplement was given daily for at least one month prior to conception and up to the date of the second missed menstrual period to a test population in which 4,750 pregnancies were confirmed. No neural-tube defects were found in the group given the vitamin/mineral supplement while six such defects occurred in the other group.

- \* Vitamin B-12 and folate intakes and plasma levels of black adolescent females.  
Reiter, L.A. et al  
Journal of the American Dietetic Association 87, 1065-7 (1987)

In a group of 39 healthy black adolescent girls, dietary folic acid intakes were less than two-thirds of the RDA in 97%, while 74% had plasma folic acid levels indicative of marginally deficient folate status.

- \* Effects of fish oils and polyunsaturated omega-3 fatty acids in health and disease.  
Special Bibliography 1992-A, Specialized Information Services, National Library of Medicine

This is a listing of 775 citations in the literature from August 1990 through September 1991 collected by an agency of the U.S. Department of Health & Human Services. It demonstrates the wide variety of pathologies in which fish oil supplements and fish in the diet can be beneficial.

- \* Vitamin E supplementation, plasma lipids and incidence of restenosis after percutaneous transluminal coronary angioplasty (PTCA)  
DeMaio, S.J. et al  
Journal of the American College of Nutrition 11, 68-73 (1992)

Supplements (1200 IU/day) of vitamin E were given to some patients after a procedure (angioplasty) to remove plaque from coronary arteries. The study was double-blind and placebo controlled. After four months narrowing of the arteries had re-occurred in 50% of the placebo-treated patients compared to 35% of those taking vitamin E. The difference was not significant due to an inadequate sample size. The wide range of vitamin E's functions are described in a review published by the Vitamin E Research and Information Service (VERIS) in January, 1993. This review, with 151 references, covers research on cancer, circulatory disorders, cataract, aging and air pollution.\*

- \* Antioxidants in the prevention of human atherosclerosis  
Steinberg, D. et al  
Circulation 85, 2337-43 (1992)

This summary of an NIH-sponsored workshop discusses the evidence for a role of antioxidants in prevention of atherosclerosis and outlines areas for further research. It cites studies showing inverse relationships between coronary heart disease risk and intakes of vitamin E and beta-carotene.

- \* Copies of this review or further information are available from VERIS at 1-800-554-1708.



## NATIONAL POTATO COUNCIL

## STATEMENT OF BOB WALTHER, VICE PRESIDENT, GOVERNMENT RELATIONS

Mr. Chairman and Members of the Subcommittee. My name is Bob Walther. I am a potato farmer from Michigan and current Vice President for Government Relations for the National Potato Council (NPC). On behalf of the Council, we thank you for your assistance for funding part of our National Research Proposal and we look forward to working with you to expand the funding in Fiscal Year 1994. We believe that increased funding of 300,000 specifically for varietal development is important and would allow for the continued development of critical research.

The National Potato Council (NPC) is a national trade association representing approximately 13,000 potato growers in thirty-eight (38) states. Our growers produce both seed potatoes and potatoes for consumption in a variety of forms. Annual production in 1991 averaged 418 million hundredweight with a farm value of \$2 billion. Total value is substantially increased through processing. The potato crop clearly has a positive impact on the U.S. economy.

The potato is the most popular of all vegetables grown in the United States. Annual per capita consumption is 126.2 pounds in 1989, up from 107 pounds in 1962, and is increasing due to the advent of new products and heightened public awareness of the potato's excellent nutritional value. Per capita consumption of processed potatoes increased dramatically from 57.0 pounds in 1970 to 76.4 pounds in 1989. Potatoes are considered a stable consumer commodity and an integral, delicious component of the American diet.

Potatoes are the number one vegetable grown and consumed in the world. In 1986, the U.S. exported 155,028 metric tons of potatoes or potato products. In 1991 we exported 412,853 metric tons, a 266% increase. These research funds will help assure that quality potatoes and potato products can continue to be exported.

The potato crop has been traditionally controlled by supply and demand in a free market. Government support programs such as price-guarantees and acreage set asides have not been necessary. However, potato growers recognize that, in order to remain a viable and competitive industry, we must constantly strive to improve production efficiency and market quality. Through carefully planned research, we believe we can continue to offer an excellent high value product and maintain a viable and competitive U.S. industry in the United States.

The National Potato Council research program is a unique program working to attack and solve certain national problems in the potato industry. The Agricultural Research Service (ARS), State University Scientists and potato growers from around the nation all participate in guiding these research programs to assure that the funds are effectively used in a priority manner and that duplication does not occur.

As you will recall, the National Potato Research Proposal was the culmination of an intensive effort begun in 1984 between the NPC and the ARS to identify national priority research issues of concern to the potato industry. Based on these identifiable research needs, the National Potato Research Proposal received initial funding for ring rot diseases; early dying disease; marketing; aphids; potato beetle and varietal development.

The monies received by the ARS have been greatly appreciated and the potato growers are starting to see some results from this research program. We are getting feedback on research results back to the producer by having researchers speak at

seminars and by making available to the potato industry a written summary of all research underway. A copy of the latest summary has been provided to the Subcommittee.

This year additional funding of \$300,000 in Varietal Development is needed and would be effectively utilized.

Success demands quality. Effective timely research keeps our products competitive.

It is important to note that representatives of the NPC have held annual meetings with ARS officials, the most recent in December of 1992, to discuss the distribution of research funds. The NPC is particularly pleased with the tremendous efforts put forth by ARS to ensure that the research conducted is meaningful and addresses industry problems in the most thorough, expeditious and cost effective manner. The NPC looks forward to continuing its close partnership with ARS to maximize the use of these important funds as this Subcommittee has directed.

The NPC has become deeply involved with and impacted by various environmental issues, including concerns over groundwater and chemical safety. We feel that our growers make every attempt to apply chemicals safely and well within Environmental Protection Agency requirements. However, we anticipate further restrictions on the use of chemicals and even the loss of some existing products. For example, the potato beetle has become an increasingly troublesome pest in many production areas and is spreading rapidly. Many production areas face increased virus and fungal diseases as well. Research is therefore even more critical given the rapid spread of these pests and diseases and the concerns over chemical use. Ultimately, it will only be possible to overcome our dependence on chemicals through plant variety breeding and use of genetic engineering approaches. This is why increased funding of varietal development research is of particular importance. Plant breeding will not only help develop improved potato varieties with resistance to insects, diseases, nematodes, and environmental stress factors, but it will also allow development of varieties with improved nutritional and market quality.

Until we achieve success in variety development research, we need to find an effective alternative for CIPC which controls sprouting in storage and retail outlet stores and is also essential for the export market. Although EPA re-registration is proceeding on CIPC, there are no other alternatives available for sprout control. The growers in the past few years lost the use of several key pesticides that were crucial in controlling blight, potato beetle, whitefly, Fusarium dry rot and weeds. Growers and researchers alike are becoming extremely alarmed at the resistance to the few remaining registered products still left on the market. Varietal development is a key to the success of our industry. Research must be accelerated to develop pest resistance varieties which would reduce use of pesticides. Biotechnology research must also be accelerated.

The NPC will continue to work closely with USDA to oversee this research and will report periodically to the Congress on the progress of the research. We sincerely thank the Subcommittee for its generous support of this vitally important research.

## NATIONAL RESOURCES DEFENSE COUNCIL

## STATEMENT OF FAITH T. CAMPBELL

The Natural Resources Defense Council (NRDC) appreciates this opportunity to outline to the Congress an insufficiently understood threat to agricultural productivity and biological conservation and our suggested steps toward a solution.

Ecologists recognize invasions by alien or non-indigenous plants (also called "noxious weeds") as threatening entire ecosystems throughout the country. Furthermore, the cost of weed control and crop losses to weeds in agriculture now exceeds \$20 billion per year.

Timber revenues lost to tree death or reduced growth caused by alien pests have been in the range of \$2 billion. Other costs include efforts to control the pests once they have entered the country. The U.S. Forest Service (USFS) is spending \$12.5 million on research and management of alien pests in FY93. The USFS and Animal and Plant Health Inspection Service (APHIS) together spent \$7.6 million in FY92 trying to eradicate the newly introduced Asian gypsy moth.

Quarantines and other exclusion programs -- programs which are the responsibility of APHIS -- are the first line of defense in protecting agriculture and natural ecosystems from the damage caused by introduced organisms. Exclusion delays introductions, thus deferring damage and allowing science to develop more effective counter-measures. The late Yale professor, Dr. John Boyce, considered quarantines particularly essential to forestry because of the long period before trees reach maturity, a fact which slows development of disease-resistant strains.

In order to enable APHIS to improve its exclusion programs and to respond more rapidly to newly discovered outbreaks of noxious weeds, NRDC has joined with the Weed Science Society of America (WSSA) and Natural Areas Association (NAA) to ask for amendments to the Federal Noxious Weed Act [7 U.S.C. §§ 2801 - 2813]. In the meantime, we ask that you increase appropriations for implementation of the Federal Noxious Weed Act from the FY93 level of \$289,000 to \$5 million.

Furthermore, to improve efforts to exclude pests threatening the health and productivity of our forests, we request a \$1.5 million increase in APHIS' Agricultural Quarantine Inspection program. This funding should be earmarked for three country-specific risk assessments to determine which forest pests might be introduced with imports of logs and other unprocessed wood products.

## Background

## Noxious weeds

Invasions by non-indigenous plants (or noxious weeds) threaten to overwhelm widespread regions throughout the United States. Hawai'i and similarly isolated ecosystems are the most vulnerable to invasions by alien species, but rangelands, forests, wetlands, National parks, and wilderness areas in New England, Florida, the Intermountain West and Northern Rocky Mountains are also heavily impacted. Alien or exotic plant species that better tolerate disturbance are able to take advantage of past or present clearing of forests, plowing, livestock grazing, and altered fire patterns. The problem has been exacerbated by deliberate or accidental introductions of the alien plant species.

The cost of controlling alien plants invading 109 National parks will be \$46 million. In the West, "noxious weeds" infest over 5.6 million acres of rangeland in Oregon alone; the affected area grows by 2,000 acres per day. The Bureau of Land Management predicts that, if control efforts are not increased, up to 20 million additional acres will be infested by noxious weeds by the year 2000. This represents 24% of BLM lands outside Alaska.

Among alien or exotic plants threatening natural ecosystems are several bindweeds of the *Polygonum* genus, including Japanese knotweed or Japanese bamboo *Polygonum cuspidatum* and Mile-a-minute weed *Polygonum perfoliatum*; tree of heaven *Ailanthus altissima*; Canada thistle

*Cirsium arvense*; musk thistle *Cardaria nutans*; yellow starthistle *Centaurea solstitialis*; multi-flora rose *Rosa multiflora*; purple loosestrife *Lythrum salicaria*; *Hydrilla verticillata*; common crupina *Crupina vulgaris*; the knapweeds -- diffuse *Centaurea diffusa*, spotted *C. maculosa*, Russian *C. repens*; leafy spurge *Euphorbia esula*; and salt cedar or tamarisk, *Tamarix*.

Site-specific control programs carried out by land managers are vitally important. However, they are also costly, piecemeal, and ultimately futile in the absence of an effective national program intended to exclude new harmful introductions; eradicate new infestations; prevent the spread of established species to additional parts of the country; and contain or (eventually) eradicate widespread species which are destroying plant communities and entire ecosystems. APHIS currently lacks adequate resources to carry out its principal responsibilities of excluding foreign weeds and containing incipient infestations before they spread. Our proposed increase would help to close this gap.

### The Threat to Our Forests

In a continuing study, the U.S. Forest Service has identified 20 exotic tree diseases and over 160 exotic insect pests of trees in the United States. According to USFS scientist Dr. F. Thomas Ledig, American chestnut, American elm, sugar pine, eastern white pine, western white pine, Port-Orford-cedar, and Florida *Torreya* have been "eliminated by introduced diseases or [are] threatened with extinction". Chestnut, the pines, and Port-Orford-cedar were all valuable timber species. Another valuable timber species, butternut, and Fraser fir (grown for Christmas trees) are candidates for listing under the Endangered Species Act because of the impact of an introduced disease or insect.

Potential losses are far higher. Two USFS/APHIS teams have estimated timber losses associated with the possible introduction of just a few of the many forest pests in Siberia and New Zealand at between \$77 million and \$58.3 billion. These estimates do not include costs associated with loss of jobs, recreational amenities, or ecological values. According to Boyce, the "father" of American forest pathology, "Diseases caused by introduced fungi are potentially a menace to every one of our commercially important timber species."

The recent discovery of three pests which slipped past existing controls<sup>1</sup> and interest in importing large quantities of logs from Siberia, New Zealand, and Chile have spurred APHIS to begin developing general phytosanitary regulations which would govern "unprocessed wood" products (see 57 Federal Register, No. 184, pp. 43628-43631). NRDC supports this long-overdue action. However, promulgation and implementation of more stringent controls on log imports will require additional staff and funds at APHIS.

Nor is stringent regulation of timber imports sufficient to protect our forest resources. At least five pests of native tree species were introduced on nursery stock; these include the chestnut blight and white pine blister rust, two of the most devastating of all the introductions. At least two other pests were dispersed within North America on nursery material. APHIS must improve its quarantine program to prevent new introductions.

To ensure the continued productivity of American agriculture, production forests, and natural ecosystems, we ask that the Agriculture Appropriations Subcommittee provide the requested increases to APHIS, which total \$6.5 million.

---

<sup>1</sup>Asian gypsy moth; European bark beetle *Tomicus biniperda*, and *Melampsora larici-populina* rust on poplar and larch.



## NATIONAL RURAL COOPERATIVE DEVELOPMENT TASK FORCE

## STATEMENT OF JUDY K. ZIEWACZ, DIRECTOR

## Summary

Community-based development is not a sufficient strategy for rural economic development in a global economy. Therefore, the National Rural Cooperative Development Task Force seeks an increase, from \$1 million to \$5.1 million, in funding for the national demonstration project that is based on sectoral linkages as a more appropriate rural revitalization strategy.

The Economic Research Service (ERS) of USDA states that the key disadvantages of rural areas in the United States to be (1) small scale and low density; (2) economic specialization of rural places; and (3) remoteness and distance.

At the turn of the century, small, isolated farmers forged cooperatives to develop horizontal links to each other. Working together, they improved access to capital markets, electricity and telephone services, production records, improved genetics, and other services. They pooled their purchasing power to buy fuel, seed, fertilizer, insurance and other products at lower costs. In their commodity groups, they worked with the land grant system to target research on the critical constraints that held productivity back. Just as importantly, farmers organized marketing cooperatives to develop vertical links that enable a farmer in South Dakota to sell his wheat in international markets.

The purpose of the national demonstration project is to replicate the strategy used by farmers in other business and human service sectors in rural areas. Members of the Task Force have undertaken specific projects to demonstrate how vertical and horizontal linkages within sectors -- small secondary wood product manufacturers, rural Emergency Medical Service providers, micro-enterprises -- create a sufficient economy of scale to overcome the inherent disadvantages of rural areas.

The project will also demonstrate how local leaders from diverse organizations can work together in regional partnerships to create opportunities for jobs, deliver human services and leverage their resources. The regions will further link themselves together to replicate successes, avoid duplication and purchase specific education and research. From the local to national levels, the process is user-driven, not government directed.

If funded at the \$5.1 million level -- a seventy-five percent match for the \$2 million in non-federal dollars available for projects across the country -- the national pilot will demonstrate the need to define "community" on a sector rather than geographic basis for economic development purposes.

\*\*\*\*

I thank the Chairman and members of the Subcommittee for this opportunity to describe the demonstration project of the National Rural Cooperative Development Task Force. Since the mid-1980s, an increasing number of people seeking solutions for rural revitalization have decided to use the cooperative model. Some call them strategic alliances, collaborative partnerships, or networks. Regardless of the name, they share the same development strategy: linking entities by sector into a sufficient economy of scale to overcome the inherent economic disadvantages of rural areas.

Establishing cooperatives or similar entities is the most difficult of development to achieve. Forging sectoral linkages goes against the grain of the predominant theories of development -- that it must be community-based and that the American economy was



built on competition -- not cooperation. We believe that the predominant theories of development are not sufficient, and perhaps illogical public policy for rural economic development in a global economy. We propose testing in other sectors the most comprehensive and successful rural development strategy ever developed and funded by the federal government.

At a time when rural and agricultural development were synonymous, Teddy Roosevelt's Country Life Commission of 1909 recommended cooperatives as a means to improve economies of scale and strengthen the vertical and horizontal linkages in agricultural production, input supply and infrastructure development for rural America.

Today, few of us can imagine what the U.S.'s agricultural sector would be without marketing and supply cooperatives, the farm credit system, rural electric and telephone cooperatives, rural water associations, mutual insurance companies, and other collaborative partnerships that provide economies of scale and strengthen vertical and horizontal linkages among the businesses and institutions that serve agriculture. The federal government's systems-approach to sectoral development combined with the ingenuity and investment of farmers and their cooperatives has resulted in an extremely productive and internationally-competitive agriculture sector.

### **Objectives of the National Demonstration Project**

The underlying premise of our national demonstration project is that isolation and diseconomies of scale create critical bottlenecks to rural economic development. If these bottlenecks are removed (or their impact lessened), then progress proceeds until a new bottleneck impedes development. To eliminate these bottlenecks, the objectives of this project are to:

- \* Through cooperative endeavors, establish vertical and horizontal linkages within sectors for strategic importance to rural America that have few rural industries and agribusinesses, high levels of unemployment or underemployment, high rates of out-migration, and low levels of per capita income.
- \* Link targeted sectors to external sources of technology, capital, information, and services in federal and state agencies, land grant universities, extension, local development organizations, and regional/national industry associations to reduce geographic and institutional isolation in rural areas.
- \* Solve specific developmental problems in targeted sectors (e.g., help family farmers produce and market lean pork to compete with integrator, help migrant workers organize a producers cooperative to grow and market specialty vegetables and spices for the Latino population in urban centers, and provide board development training to minority-owned community cooperatives in the South).
- \* To provide a vehicle for population groups and communities historically outside the mainstream of the small business sector to access resources, technical assistance, and training to create cooperative businesses, including community development credit unions, producer and worker-owned cooperatives.
- \* Investigate and test how cooperatives and collaborative partnerships can serve as a vehicle for technology transfer, adaptation of existing technologies, commercialization of new products, and value-added processing of new agricultural and forest products.

### **Regions and Projects**

Eight regions will use the \$1 million appropriated in the FY93 Agriculture Appropriations bill to replicate the cooperative model in other sectors. Although the law

requires only twenty-five percent, the regions bring a fifty-percent match to the table. The following summarizes the regions and their projects:

**Northeast (New York & New England States):** (1) link existing cooperatives to national and international markets through a telecommunications network; (2) assist local groups in New England states that are trying to develop innovative multi-community collaboration; (3) assist low-input sustainable agriculture producers develop urban markets; and (4) work with county planners at the local level to help develop linkages that could strengthen local economies.

**Upper Midwest (Wisconsin, Minnesota and Iowa):** (1) develop and test a cooperative model to help Iowa hog producers to produce and market 51% or more lean pork by providing an integrated production system that makes available lean pork genetics, redesign of swine facilities, improved feed formulations, management assistance, and record-keeping systems in collaboration with the University of Iowa, and marketing agreements with Conroy Farmers Cooperative; (2) utilize value-added technologies developed by the Minnesota-based Agricultural Utilization and Research Institute to establish two marketing and processing cooperatives of specialty crop producers; (3) provide technical assistance to establish the Wisconsin Early Stage Cooperative Revolving Loan Fund, a collaborative partnership between electric cooperatives, leaders of established agricultural cooperatives, the University of Wisconsin-Extension, and others.

**Mississippi River Delta (currently Arkansas):** (1) through Arkansas Wood Manufacturers, a recently organized network of secondary wood products manufacturers, expand services aimed at improving the competitiveness of the industry in global markets, including joint purchasing of group health and product liability insurance; (2) test a hybrid cooperative marketing model, WoodWorks, Inc., to expand sales of value-added, non-commodity wood products that can be replicated in other industries and regions; (3) expand the MetalWorking Connection from a regional manufacturing network of 60 small metal fabricating shops to a broader geographically based network; and (4) demonstrate the economic impact on rural employment, sales, and value-added of strengthening horizontal and vertical linkages in the metal fabrication and secondary wood products industries.

**Pacific Northwest (primarily Washington):** (1) assist a group of former migrant workers to organize Cooperativa de Trabajadores Migratorios, a producer cooperative in the Yakima Valley of eastern Washington, that will grow specialty vegetables for the large, urban Latino population of the state; (2) help an emerging group for wood products manufacturing networks in eight timber-dependent counties organize a regional network; (3) provide technical assistance to migrant workers organizing Cooperativa Forestal de Oregon, a worker-owned cooperative of reforestation workers. The cooperative will operate under subcontract with independent brokers who bid on government and timber industry contracts; and (4) working with the State of Washington Employee Ownership Program, make retiring small business owners aware of selling their businesses to employees.

**The Dakotas (currently North Dakota):** (1) assist four of 11 emerging and planned cooperative from among the following:

<u>Name</u>	<u>Type</u>	<u>Status</u>
Central Growers	Potato processing	Business plan
Dakota GWRS Pasta Co.	Durum to pasta	In construction
Food Dist. Cooperative	Food ingredient	Feasibility
Industrial Oil Seed	Refining oil seeds	Feasibility
Bison Cooperative	Processing bison	Feasibility
Cattle FDRS	Backgrounding calves	Business plan
Aquaculture	Fish production	Feasibility
North West Bird Seed	Bird seed marketing	Business plan
Portland Bean	Edible bean processing	Share drive
Quality Pork	Farrow to finish	Launch
SW Wheat Mill	Specialty flour	Feasibility

(2) develop training programs for emerging cooperatives at the Quentin Burdick Center at North Dakota State University focusing on cooperative law, tax codes, capital formation, marketing; and (3) provide technical assistance to create a fund for early equity in emerging strategically important cooperatives.

**Western States Region (currently California):** (1) develop a training cooperative among local government units in collaboration with the UCD Medical school to train rural emergency medical services (EMS) providers that serve sparse and geographically dispersed populations in rural California; (2) establish a cooperative rental kitchen for small-scale food processing businesses, in collaboration with FoodWorks, a business incubator that helps displaced women and minorities create home-based food processing; (3) help 96 Trinity county workers displaced by reductions in harvests from the national forest to develop markets for their products through multiple-store chain outlets; and (4) create a development team of board and

management to provide on site guidance to strengthen the operations, capital base and management of six small consumer cooperatives.

**Southeast Region:** (1) develop marketing relationships between minority-owned farmer and long-established agricultural marketing cooperatives to link disadvantaged farmers to national and international markets; (2) create a collaborative partnership to overcome historic barriers and secure advice, participation, expertise and assistance from appropriate businesses, industry, universities, extension, and government agencies to supplement and support the education and training programs; and (3) create effective educational and training programs that provide the tools necessary for minority farmers to retain their land and stop out-migration.

**Great Plains Region (currently Kansas):** (1) determine value-added agricultural enterprises most appropriate to improve Kansas' rural economy; (2) learn from the experience of other regions in value-added processing, and commercialization of alternative agricultural products; (3) develop working partnerships with local and state economic development agencies, nonprofit organizations, and state and federal agencies that can assist in the development of value-added agricultural enterprises; and, (4) lay the groundwork for a multi-state Great Plains Cooperative Development Center.

### Conclusion

Over ninety organizations are members of the National Rural Cooperative Development Task Force. We believe that in addition to our strategy for rural revitalization, we have created a paradigm which brings the leadership of existing rural organizations together with their combined human and financial resources to again use the cooperative self-help model with a federal investment for technical assistance to foster sustainable rural economic development. Some might suggest we are re-inventing government. We would submit we are helping to re-invigorate the most comprehensive and successful rural development strategy ever developed and funded by the federal government.

We hope the members of the Subcommittee agree and increase the funding level from \$1 million to \$5.1 million in the FY94 Agriculture Appropriations bill so that this partnership can be expanded. The \$5.1 million is far short of the \$50 million authorized in Section 2347 of the 1990 Farm Bill, but it would provide core funding to create the capacity to insure the success of these projects and improve the economic opportunities of rural America.

## NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

## STATEMENT OF BOB BERGLAND, EXECUTIVE VICE PRESIDENT

EXECUTIVE SUMMARY: Rural electric systems continue to provide high quality electric service to more than 25 million rural Americans. Borrowing from the REA comprises the federal assistance afforded rural electric systems, while other components of the electric utility industry receive federal assistance through the tax code (investor-owned utilities) and by the ability to issue tax-free bonds (municipal systems). Initial Administration proposals would have deleted all federal assistance to rural electric systems and their consumers, while other utilities continued to enjoy their subsidies. It appears however, that an accord is near which achieve budget savings sought by the Congress and the Administration and provide for affordable, timely capital for rural electric systems. The proposals also contain some additional tools for rural electric systems to continue and expand their work in community and economic development.

We respectfully request, for Fiscal Year 1994, \$125 million in insured loans for rural electric borrowers meeting hardship criteria set forth in Reconciliation language; \$600 million in insured loan funds bearing an interest rate tied to the municipal bond index; for REA loan guarantees of Federal Financing Bank (FFB) loans, a floor of \$813,450,000 and a ceiling of \$1,961,850,000 and language which prohibits scoring FFB loan repricings allowed by contract agreement against these totals. NRECA also recommends appropriations to fund the Rural Economic Development Subaccount, as well as adequate amounts for salaries and expenses.

Mr. Chairman, distinguished members of the Subcommittee, I am Bob Bergland, executive vice president of the National Rural Electric Cooperative Association (NRECA), the Washington-based association of the nation's 1,000 nonprofit, consumer-owned rural electric systems, which provide electric service to more than 25 million rural Americans in 46 states, and I submit this testimony on their behalf.

Before I discuss NRECA's recommendations for REA lending levels, I would like to provide you and members of the Subcommittee with a brief report on the "State of the Program."

- ♦ Rural electric systems continue to provide high quality and reliable electric service to more than 10 percent of the nation. Rural electric lines span 75 percent of the nation's land mass.
- ♦ Rural electric systems continue to operate under the same disadvantages that have traditionally existed in the program. Rural electric systems now serve an average of only 5 consumers per mile of line compared with 34 customers per mile for investor-owned electric systems and 44 per mile for municipal systems.
- ♦ Revenue per mile of line for a rural electric co-op amounts to \$6,505 annually, compared to the \$56,582 collected by investor-owned utilities and \$69,787 for municipal systems. Conversely, co-ops have invested \$1,847 in distribution plant for each consumer compared to \$1,408 per customer for investor-owned utilities and \$1,361 per customer for municipal systems.
- ♦ Today, more than 70 percent of rural electric systems have higher rates than their neighboring utilities. This disparity can be traced to several factors:



- \* The inherent disadvantages of serving sparsely populated areas;
  - \* The fact that rural electric systems serve relatively few commercial and industrial loads compared to other utilities, and
  - \* The fact that nearly 70 percent of the generation capacity of rural electric systems has been placed into operation during the past 15 years, a period of inflated construction costs and high interest rates, and, to comply with the requirements of the 1972 Clean Air Act, has expensive, state-of-the-art pollution control equipment.
- ♦ Rural electric systems serve areas that have been hard hit by an ailing and changing rural economy. This has reduced load growth for many rural electric systems. We hope improvements in the rural economy will reverse this trend.

Rural electric systems comprise an integral, vital infrastructure for rural America, and rural Americans and national leaders look to these cooperative electric systems to play a leadership role to implement programs that will provide jobs and economic growth.

Rural electric loans represent a valuable investment in rural America. For every million dollars of REA loans, approximately 51 jobs are created, about half in construction and the rest in the supply of goods and services to electric utilities. These are not part-time, minimum wage, make-work jobs: These are jobs for skilled and unskilled workers that pay well and carry benefits.

These jobs generate dollars that stay in rural America to feed the small-town merchant, improve the tax base and stimulate jobs in urban areas. Rural electric jobs provide a vital cash injection into the economy at once and with long-term beneficial effect.

Rural electric systems are nearly unique community institutions in that they are in place with a long record of service, they have deep roots in the communities they serve, and because they are owned by those they service, they have a civic agenda that extends beyond the vital role of providing electric service. That civic agenda includes jobs creation and community development, provision of other essential utility services such as water and waste treatment, telecommunications, housing and a host of other desirable community services.

Rural electric utilities, like all electric utilities, are financed in large measure by debt capital. Rural electric utilities, like all electric utilities, receive some form of federal assistance in their acquisition of capital. Rural electric assistance comes through the REA insured loan program and amounts to \$39 per consumer. Investor-owned utilities receive assistance through the tax code, benefiting from accelerated depreciation and the collection of taxes never to be remitted to the federal government. Their per-consumer subsidy amounts to \$60. Municipal utilities can issue tax free bonds, and their assistance amounts to \$92 per consumer.

Rural electric systems do not object to assistance flowing to the investor-owned utilities and to the municipal systems.

However, the Administration's initial proposals for Fiscal Year 1994 would have eliminated rural electric systems' assistance by raising the interest rate on insured loans from the current mandated 5 percent to the government's cost of money.



We are pleased that the Administration has worked cooperatively with us and with Members of Congress to fashion an agreement on loan levels for rural electric systems, and we would respectfully ask this Committee to consider the provisions of that agreement.

The agreement accomplishes budget savings sought by Congress and the Administration while retaining for rural electric systems a source of affordable capital. The agreement provides rural electric systems with additional tools to provide vital additional utility functions as well as economic and community development services in rural areas.

The job of rural electric systems is far from finished. In addition to the traditional continuing necessary functions of service improvement, line extension and quality of service investments, rural electric systems have the potential to expand their civic agenda to provide additional services in water and waste treatment, telecommunication and housing.

Nor is the job of the Rural Electrification Administration finished. Yes, it is true that most of rural America is electrified, but rural electric systems continue to rely on the REA for technical and engineering assistance, financial advisory services, and other support as they deal with an ever more sophisticated and demanding generation of consumers.

The private/public partnership between REA and its borrowers is a model that continues to be an incredible success story for the nation. The extension of that partnership into new services in coming generations can be equally successful.

Through this partnership, rural electric systems have already been able to accomplish much:

- ♦ Consumer-owned rural electric utilities received loan advances of \$609 million in insured loans and guaranteed funds in FY 1992 while paying the federal government more than \$3.2 billion on loan interest and principal payments, resulting in net loan repayments to the U. S. Treasury of \$2.6 billion;
- ♦ Some co-ops have been able to provide basic water and waste treatment facilities;
- ♦ Cooperatives have been extremely active--and very successful--in leveraging federal rural development loans into economic stimulus packages that benefit local communities and create jobs and economic opportunity;
- ♦ In 1987, Congress authorized and funded at REA a small zero-interest rural development program "for the purpose of promoting rural economic development and job creation projects."

Through FY 1992, REA had approved 314 projects totalling \$27.2 million. Accordingly,

- \* These REA dollars have leveraged \$204.6 million in other capital that will create 6,713 direct jobs;
- \* This program has a direct job creation per one million dollars of federal investment of more than 245 to one; and
- \* The program has proven highly successful in leveraging capital: 7.5 non-REA dollars for each dollar of REA capital.

\* There are consistently more applications than funds available for this program.

We can do more. We believe that rural electric systems can play a larger role in extending those very services that local community leaders seek desperately, namely water and waste treatment. I needn't remind this Committee of the fragile balance of many, many rural water and waste systems, and I needn't remind the Committee of the near impossibility of local communities with volunteer governments to meet rigid federal standards for water and discharge purity.

Rural electric cooperatives have engineering and construction experience and capability; they have accounting resources; they have incredible local support and their utility experience in billing, collection and servicing is an important indicator of success.

Rural electric systems are ready, willing and able to undertake in ever greater magnitude the responsibility for development and construction of such systems. This could be accomplished by local co-ops working with local water systems in productive partnership.

This is a new Administration, and there is an aura of expectation, a breath of anticipation that perhaps change, real change, is indeed possible, that the reestablishment of confidence in government and the regeneration of a government closer to the people, fit, trim and efficient, is doable and imminent.

Certainly, progressive changes in the rural electric program that will be considered by this Committee represent an important step in that direction.

Based on the assumption that change through budget reconciliation will be accomplished, NRECA recommends the following:

- \* \$125 million in insured loans for rural electric borrowers that meet hardship criteria contained in Reconciliation legislation;
- \* \$600 million in insured loans for other than hardship rural electric borrowers bearing an interest rate based on the municipal bond index;
- \* For REA loan guarantees of Federal Financing Bank (FFB) loans, a floor of \$813,450,000 with a ceiling of \$1,961,850,000 and language which prohibits scoring repricings allowed for in borrower contracts as new loans obligating these funds;

We respectfully request that the FY 1994 Agriculture Appropriations bill also include the following provisions:

1. that adequate salaries and expenses be provided to support a minimum REA staff level of 550 employees.
2. That, in view of the fact that the zero-interest loan program provided by the Rural Development Subaccount creates jobs and successfully leverages federal dollars, and in view of the fact that the amount of applications exceeds funding, the Subaccount program is worthy of continued funding above the \$13.3 million requested by the Administration for FY 1993.

I appreciate the opportunity to submit this testimony to you, and would be happy to answer any questions the Committee may have.

NATIONAL RURAL TELECOM ASSOCIATION  
STATEMENT OF JOHN F. O'NEAL, GENERAL COUNSEL

**SUMMARY OF TESTIMONY REQUESTS**

**Project involved:** Telephone loan programs administered by the Rural Electrification Administration

**Actions proposed:** Supporting the President's request for continuation in FY 1994 of loan levels for the insured, guaranteed and Rural Telephone Bank lending programs in the ranges authorized for FY 1993 and the requests contained in the investment package for \$25 million increases in loan levels in the insured and Rural Telephone Bank loan programs, respectively. Opposed to the President's request to eliminate the subsidy cost in the insured telephone loan program.

---

Mr. Chairman, Members of the Committee:

My name is John F. O'Neal. I am General Counsel of the National Rural Telecom Association. Our association is comprised primarily of commercial telephone companies which borrow their capital needs from the Rural Electrification Administration to furnish and improve telephone service in rural areas. Approximately 1000, or 71 % of the nation's telephone companies borrow from REA. About three-fourths of these are commercial telephone companies. REA borrowers serve almost 6 million subscribers in 46 states and employ over 28,000 people. In accepting these loan funds, borrowers assume an obligation under the act to serve the widest practical number of rural users within their service area.

**Background**

Rural telephone systems have an ongoing need for long-term capital at affordable interest rates. Since 1949, that capital has been provided through telephone loan programs administered by REA. Telephone loans are made "to furnish and improve" local telephone service in rural areas. A rural area is defined in the Act as those areas not included in the boundaries of a city or town which has a population in excess of 1500 inhabitants.

REA loans are made exclusively for capital improvements and loan funds are segregated from the borrower's operating revenues. Loans are not made to subsidize operating revenues or profits of the borrower system. There is a proscription in the Act against loans which would duplicate facilities and state authority to regulate telephone service is expressly preserved.

Rural telephone systems operate at a severe geographical handicap when compared with other telephone companies. While almost 6 million rural telephone subscribers receive telephone service from REA borrower systems, they account for only four percent of total U.S. subscribers. On the other hand, borrower service territories total 37 percent of the land area -- nearly 1½ million squares miles. The average REA borrower serves about six subscribers per mile of telephone line and have more than 1,000 route miles of lines in their systems.

Because of low-density and the inherently high cost of servicing these areas, Congress made loan funds available at subsidized rates of interest to assure that rural telephone subscribers, the ultimate beneficiaries of this program, have comparable telephone service with their urban counterparts at affordable subscriber rates. This principle is especially

important and valid today as the U.S. enters the "Information Age" with customers and regulators constantly demanding improved services.

Without the REA program the quality of telephone service in rural areas would deteriorate. The REA Act imposes a higher standard of service than otherwise is required of local telephone systems. Before REA, if carriers provided service at all in rural areas it was only down the main roads because service on any other basis was not economically feasible. Today, thanks to the Congress and the REA, telephone service is provided to the "widest practical number of rural users" in each borrower's service area -- a mandate that REA strictly enforces and a standard of service that the borrower assumes when it receives a loan from REA.

Mr. Chairman, continuation of a strong REA program is very important to rural America. This Committee and the Congress as a whole have strongly supported the REA telephone program since its inception in 1949. We appreciate your past efforts and look forward to an even stronger REA program for the future.

We are proud to state once again for the record that there has never been a default in the REA telephone program. All loans have been repaid in accordance with their terms with interest. At the end of FY 1992, a total of over \$6.50 billion in principal and interest had been paid by borrowers.

#### Need For The REA Telephone Loan Program Continues

The need for the REA loan program is as great today as ever before, possibly even greater than in the past. Much of the telephone loop plant in rural America was installed in the early 1950's and will soon be due for replacement. Technological advances make it imperative that rural telephone companies upgrade their systems to keep pace with these improvements and provide the latest available technology to their subscribers.

As the rural infrastructure keeps evolving, the potential benefits for rural life and the rural economy are impressive. Interactive optical fiber can provide education opportunities in even the smallest towns comparable to hiring many extra teachers. Using communications for medical diagnosis, monitoring and even treatments like heart defibrillation can help combat the shortage of doctors and the rash of rural hospital closings. Improved emergency services can save lives. For example, telephone systems are working at improving the ability of the 911 emergency system to recognize the location from which emergency calls originate to allow faster response. Businesses like telemarketing and insurance can thrive in rural areas, and telecommuting can become a realistic employment option. The REA programs are already providing financing for digital switches, more fiber between central offices and for school and medical communications facilities, helping rural communities to reap the benefits of technology.

In addition, rural Americans continue the struggle to revitalize their rural economies. In light of the fact that both Congress and the President have indicated that telecommunications enhancement is a significant part of such development, the need for affordable capital to finance technological upgrading is greater than ever.

The explosive pace of technological development offers new opportunities for rural America. New systems can take advantage of major breakthroughs in what computers can do and how much capacity and speed can be made available for data, voice or video transmissions. But falling behind metropolitan areas in infrastructure development could spell a dim, non-competitive future for small, rural communities.

An immediate need for many small systems is to equip their networks for participation in the new public switched network signaling technology known as SS7. SS7 will provide basic call set-up, routing, billing, credit card validation and other functions more efficiently.

This technologically advanced signaling also will enable rural areas to reap the benefits of Integrated Services Digital Network (ISDN) linked to networks and services across the nation. The new signalling technology will also allow number portability, so 800 service customers can change long distance carriers without changing their call-in telephone numbers. SS7 opens up opportunities for "intelligent network" services, such as Custom Local Area Signaling Service (CLASS) Services, transactional services, and even tomorrow's individual telephone number that can receive calls wherever its "owner" travels. These network upgrades will help each rural customer tap into information resources across the country.

The costs of SS7 participation are considerable. For example, one small company executive testified several years ago that her company would need to invest more than \$450,000 to bring SS7 technology to her service area.

A nationwide broadband network has also been heralded as a national infrastructure goal, needed to keep this country globally competitive and improve the quality of life. For example, The Alliance for Public Technology recently recommended upgrading the public switched telephone network to make interactive broadband "platform" universally available. Rural areas cannot afford to be left out of the interactive capabilities broadband technology will provide to urban and suburban users.

These facts offer conclusive proof that the REA program is as necessary today as it has ever been. This continued need has been confirmed in four recent studies, three of which are sponsored by the federal government. Congress concurred with these studies when in its Rural Telecommunications Improvements Act of 1990 it reaffirmed the continuing importance of the REA telephone loan program and called on the program to play an even greater role in rural America.

These rapid technological changes and federal policies of competition and deregulation in the telephone industry underscore the continuing need for targeted assistance to rural areas. Also, the inherently higher costs to serve these areas have not abated. For example, a recent Southwestern Bell study showed that transport costs for its low volume areas are almost ten times higher than for its areas with higher traffic volumes. Regulatory trends towards encouraging competition with telephone systems increase pressures to shift more costs onto rural ratepayers. Interstate subscriber line charges of \$3.50 have already shifted costs to customers. Pressures to recover more and more of the higher costs of rural service from rural customers to foster urban competitive responses will further burden rural consumers. And, as rural rates rise, small systems will tend to lose confidence that they can recover the investments for costly network upgrades.

The amount of loan applications pending at REA are indicative of the increasing demands for improved service. At the end of FY 1992, completed telephone loan applications and loans carried over into the new fiscal year totaled \$221 million. The attached chart indicating the current state-by-state status of telephone loan program applications shows that the amount has increased to almost \$300 million in the first four months of FY 1993 despite loan approvals of \$111 million during that same period. I know the Committee will agree that these figures, furnished by REA, amply demonstrate the ongoing need for this important program at current levels.



UNAPPROVED REA TELEPHONE LOAN APPLICATIONS ON HAND JANUARY 31, 1993\*

STATE	NUMBER OF APPLICATIONS	\$ AMOUNT OF APPLICATIONS
GA	2	\$ 34,672,000
IN	2	9,414,300
IA	2	3,864,000
ME	1	2,645,000
MH	1	3,999,000
MN	2	8,084,550
MS	1	1,656,900
MT	1	11,183,000
NM	1	3,339,000
NY	2	4,622,000
NC	2	6,064,500
ND	2	7,953,000
OK	6	48,300,000
OR	1	10,310,000
PA	1	455,700
SD	1	11,685,000
TN	2	23,527,000
TX	2	3,526,000
UT	1	5,522,000
VA	2	12,173,000
WA	1	4,497,150
WI	6	68,700,350
TOTALS	42	286,193,450

\*Source: Rural Electrification Administration

NOTE: In addition, during the first four months of FY 1993, the agency has approved 21 new telephone program loans totaling \$111 million.

The Clinton Administration's FY 1994 Budget Proposal

The President's FY 1994 Budget proposes to maintain the telephone program at loan levels enacted for FY 1993 and, as a part of the President's investment package for the Rural Development initiative, proposes to increase loan levels in the insured and Rural Telephone Bank programs by \$25 million each. The additional \$50 million is requested to be reserved for distance learning, medical link and other telecommunications modernization projects.

We wholeheartedly support the President's initiatives for enhancement and expansion of the rural telephone program and the inherent recognition of the significant role expected of this program in the future. Rural telecommunications infrastructure development is essential

to the accomplishment of the President's revitalization package objectives. Telecommunications plant and technology is the most basic aspect of today's rural development.

In addition, the REA telephone program meets other stated objectives of the President in connection with his economic program. It creates jobs, represents "investment" spending rather than "consumption" spending, is bringing new life to rural communities and is building our country through investments in infrastructure. It is truly a program that is in step with the economic and political needs of our time.

The FY 1994 Budget proposal also calls for elimination of all subsidies in the REA insured program with the exception of the \$25 million earmarked for "distance learning and medical link and other telecommunications modernization projects." At current interest rates this would mean raising insured loan interest rates from 5 percent to the long-term Treasury Rate (6.8 percent). In the telephone program, this would achieve savings of only \$7.5 million in FY 1994 and \$103.5 million over four years as projected in the Clinton budget. We oppose this proposal because these increased costs would be passed on to rural ratepayers who are already burdened with increasingly high rates for service. Without the subsidized credit assistance provided by REA, even greater pressure would exist for rate increases to local subscribers. This subsidy cost of the insured program represents the only significant cost to the taxpayer of the entire REA telephone program other than program administrative costs. It is our firm belief that the value of this assistance to rural ratepayers far outweighs the cost to the taxpayer. While this issue technically is not before the appropriations committee it is an essential ingredient to the success of the program and warrants discussion here.

### Conclusion

The President exclaimed in his economic message to Congress, "We ought to be subsidizing the things that work"! We agree with that assessment. The REA telephone loan program does work and work effectively. It is in place today and it is doing the job Congress intended. It doesn't have to be re-invented or replaced with untried concepts or new proposals. The REA telephone program has a proud record and unlimited future potential for our country.

Thank you for the opportunity to present our association's views concerning this vital program.

## NATIONAL RURAL WATER ASSOCIATION

STATEMENT OF ERNEST FAUCETT, BOARD MEMBER, ARKANSAS  
RURAL WATER ASSOCIATION

Mr. Chairman, thank you for allowing me, as Board Member for the Arkansas Rural Water Association to appear before your Committee today. I am here on behalf of the National Rural Water Association (NRWA), as well as the Arkansas Rural Water Association and rural water folks all over this country to thank you for the generous and very important increase given the rural water and sewer grant program last year.

As you know the Arkansas Rural Water Association is made up of 496 small water systems all over our state. We provide technical assistance and training to all of our state's small water systems. Last year our staff made 2,852 on-site technical assistance visits to small systems. Over 950 people attended our training sessions and 25 communities were assisted in the preparation and completion of community groundwater protection ordinances.

The funds provided by the Committee are being used for these efforts and will be used to great advantage by many small water systems to improve people's health, strengthen local economic opportunity and assure that rural America stays strong. Finally we want also to express our deepest appreciation for the help of the Committee in providing an increase in funds for our rural water circuit rider program last year which has enabled us to strengthen the program in all states. We are here today to request the continued support of you and the Committee for these two very important rural programs.

Specifically, we are requesting:

- funding for the RDA rural water and sewer grant program at \$600 million and the loan program at \$900 million
- funding for the Circuit Rider technical assistance program at \$4.5 million to allow for a more intense use of circuit riders in areas of the country affected by the most serious environmental problems.

Our primary reason for supporting additional funding in the water and sewer grant and loan program is the established recognition that water and sewer services are a basic element to rural development in this country. As environmental and health expectations rise, the need for safe and clean water has become a necessity for rural residents. Community water systems provide this service. RDA grants and loans allow those residents to build systems and to repay the loans over an extended period. Without the current assistance from RDA, most rural residents could not initiate the construction of new systems and the expansion of existing ones. Additional funding will allow more rural Americans the opportunity to have access to a safer water supply.

We are very aware that without the support of this Committee, that the program would not be operating today. It is impossible to overestimate the debt that rural America owes you and this Committee for standing firm for rural water over the past ten years.

The importance of the RDA grant and loan funds grows each year as the Federal government presses for higher and higher environmental standards on small water systems. The goal of RDA has always been to bring safer drinking water to rural residents. However, now EPA has strengthened its role through both the Safe Drinking Water Act (SDWA) regulations and the deadline on compliance with the Clean Water Act. New regulations on Surface Water Treatment, Lead and Copper testing and the listing of 25 new contaminants this year are slowly overwhelming many small systems.

These federal requirements are dramatically increasing the cost of managing rural water and rural wastewater systems. In response, small communities have gone to their state governments for help and in some cases have received new resources. However, in these and other cases it would be impossible to gain new financial support without the critical "seed money" that the RDA grant funds provide for projects in low income areas of each state. These grant funds are highly leveraged and the increase in the grant program is having a multiple impact on the improvement of small water and sewer systems throughout the nation.

This funding is vital to most small water systems because rural water districts do not have the legal standing to float bonds, levy taxes or seek other types of public financing. Private financing as a sole source has seldom been an alternative because of its high cost and consistent unavailability. With a repayment rate on RDA water and sewer loans of over 99%, this is the soundest government loan assistance program in the nation.

The Environmental Protection Agency (EPA) continuously cites the RDA rural water and grant loan program as the major source of funding assistance to help small rural systems meet SDWA requirements. During Congressional testimony, a question to EPA received the following response:

The Agency has met with the RDA in an effort to ensure that adequate financial support is and will continue to be available to small water systems to meet additional requirements imposed by the Safe Drinking Water Act.

This is of particular importance in that the cost to small water systems for SDWA compliance is estimated at \$8 billion over the next twelve years. While much of this cost will be borne by the small water system customers themselves, the RDA program is the catalyst to generate the necessary funding. In effect, we have one federal agency imposing regulatory requirements and relying on another agency (RDA) to provide funds to support compliance. It is in rural areas which the RDA grant and loan program is critical to SDWA compliance.

The second area of our concern is the assistance available to help improve the operation and maintenance of existing rural water systems. Most rural water systems were developed because neighbors got together and decided that something had to be done about their collective poor quality or lack of water. These people formed water districts, signed up customers, borrowed funds from the only source available - RDA - and set up a small water system operation with part-time personnel.

These systems are as varied in their size and structure as rural America itself. Many have grown from a few hundred households to several thousand. Many older systems are having serious operational problems with old and worn out water systems. The common problem among these systems is the need to improve the quality of the water while continuing to provide water in the most cost effective manner possible.

What has evolved from this need is the rural water circuit rider technical assistance program now operating in forty-eight states, thanks to the funding provided by this Committee last year. A full-time rural circuit rider, working under the oversight of each state rural water association, is available to provide hands-on assistance and guidance to all rural water systems in every state regardless of size or problem. This has allowed many rural systems to steadily improve the efficiency of their operation and the quality of the water delivered. Approximately one half of our contacts were made in response to direct calls for help from water system personnel. Circuit Riders have saved significant amounts of money in preventing water loss, reducing the need for replacement of pipes, pumps and other equipment and in working with systems to set adequate water rates in order to provide funds for continuous preventive maintenance. Often these savings are used to reach new customers or make improvements required by the SDWA.

During the past year, the Circuit Riders throughout the country have made over 26,000 on-site types of technical assistance to rural water systems throughout America to provide hands-on help. We believe that having a national border-to-border program is having a dramatic impact on the upgrading of small water systems in those areas with the most serious water problems.

Finally, we would appreciate your assistance in protecting small systems under FmHA 1926(b). If possible, we would like to have the FmHA 1926(b) provisions extended to protect rural water systems with RDA grants as well as those with only RDA loans.

One special request we are making is that you consider increasing the funding for the circuit rider program to \$4.5 million a year to provide for circuit riders in high environmental risk areas. The SDWA requires small water systems to test for over eighty new contaminants over the next three years. Circuit Riders have been the primary assistance available to the smallest and most out-of-compliance rural systems.

In closing, we want to again thank you for your past support of rural water and to urge you to increase the funding level for the RDA rural water loan program to \$900 million, increase the RDA rural water grant program to \$600 million and provide \$4.5 million for the Circuit Rider program.

NATIONAL UTILITY CONTRACTORS ASSOCIATION  
STATEMENT OF GERALD DORFMAN, PRESIDENT

MR. CHAIRMAN and Members of the Subcommittee, I am Gerald Dorfman, President of Dorfman Construction Company located in Woodland Hills, California. My company specializes in water and sewer construction. I presently serve as President of the National Utility Contractors Association (NUCA). NUCA represents nearly 1,700 contractors, suppliers, and manufacturers across the country who help build the sewer and water systems financed by the Rural Development Administration's (RDA) Water and Waste Disposal Grant and Loan programs and the Emergency Community Water Assistance Grants program.

Rural America's clean water needs are unique, and financing for life-sustaining water and waste disposal facilities is a challenge for most small towns and communities. The RDA water and waste construction grants and loans provide desperately needed sources of revenue for rural residents who cannot afford private financing or are unable to utilize the Environmental Protection Agency's State Revolving Loan Fund (SRF) program.

I recently completed a northern California job that illustrates the importance of RDA programs. RDA provided financing for the replacement of a septic system that served a small neighborhood. While prospecting the job before preparing the bid, I was dumbfounded to see that the families' backyards were saturated. Saturated not with water, but with wastewater--raw sewage that had overflowed from failed leaching systems. These families were literally trapped in their homes. The impact on their quality of life was immeasurable. It is hard to imagine how severely that community would have been affected without help from the RDA.

Failing waste disposal systems are not the only threat to rural communities. Dangerously old and decaying water pipes are an equally insipid threat. Until a water main breaks or entire towns are stricken with health



problems due to water contamination, people assume that the water delivery systems to their homes and businesses are adequately maintained.

#### **Recommendation For Fiscal Year 1994**

The evidence of failing water and waste disposal systems unearthed every day by underground contractors points to the need for continued federal support for the construction, replacement, and rehabilitation of clean water infrastructure in rural areas that are unable to afford other types of financing. NUCA requests that the Subcommittee approve \$1.5 billion in fiscal year 1994 for the RDA's Water and Waste Disposal Grant and Loan programs (\$600 million and \$900 million respectively). NUCA also supports continued funding for the Emergency Community Water Assistance Grants program.

#### **Clean Water Infrastructure Is A Necessity For Life**

RDA grants and loans for drinking water and waste disposal systems are a critical federal investment that should be continued. Clean Water Act and Safe Drinking Water Act compliance is a major financial problem for many small communities. Without these grants or low-interest loans, new construction and system rehabilitation simply would not happen. Traditional funding sources remain out of reach for rural communities that have a limited tax base and many rural water districts do not have the authority to issue public debt to pay for necessary improvements.

Financial obstacles aside, adequate funding for water quality facilities is a necessity for life. These projects protect public health and the environment, generate employment, and spur economic prosperity. Investment in water and waste disposal systems increases the rate of return to private capital, labor productivity, private investment in plant and equipment, and the tax base of the community.

As you may recall from our testimony last year, a 1992 study released by NUCA concludes that as many as 57,400 jobs are created for every \$1.0 billion invested in the construction of water supply and waste disposal facilities. These are good jobs that pay good wages, particularly in rural areas that welcome job opportunities.

**Putting People First -- Fiscal 1994 Appropriations**

The importance of clean water to everyday life is clear. But by not providing and maintaining adequate systems to acquire it, deliver it, and clean it, we are destroying our fresh water supplies. A \$1.5-billion appropriation will go a long way toward helping small communities comply with federal requirements and improve their short- and long-term economic status.

NUCA appreciates the opportunity to submit comments and provide the construction contractor's point of view. We look forward to working with the subcommittee for many years to come. Thank you.

[CLERK'S NOTE.--The Report on Clean Water Investment and Job Creation does not appear in the hearing record but is available for review in the subcommittee files.]

## STATEMENT OF THE NAVAJO NATION

INTRODUCTION:

Mr. Chairman and Members of the Subcommittee, the Navajo Nation appreciates the opportunity to present the Navajo Nation's request to this Subcommittee and to make recommendations as you continue to work within the appropriations process for Fiscal Year 1994.

The Navajo Nation looks forward to working with the Subcommittee to build significantly upon the initial progress made last year in the Navajo Nation's first concerted effort to secure greater participation in U.S. Department of Agriculture ("USDA") programs. Provided below is the Navajo Nation's specific requests for USDA FY 1994 appropriations, as well as, some background information on the Navajo Nation and its expanding cooperation with USDA.

APPROPRIATIONS REQUESTS FOR USDA FY 1994 BUDGET:

The Navajo Nation requests the following appropriations for inclusion in the USDA FY 1994 Budget, to establish a base level of USDA assistance to the Nation:

Soil Conservation Service (SCS) \$1,694,000

Watershed Planning Team	400,000
RC&D Critical Area Treatments	504,000
Staffing of Field and Area Offices	790,000

Agricultural Stabilization and Conservation Service (ASCS) \$1,200,000

Special Conservation Projects (ACP-LTA)	1,000,000
Navajo Nation Office/Staffing	200,000

Farmers' Home Admin./Rural Development Adm. (FmHA/RDA) \$11,719,000

Comprehensive Rural Development Planning	500,000
Solid Waste Disposal	5,200,000
Irrigation Water Systems	5,769,000
Navajo Nation Office/Staffing	250,000

Cooperative Extension Service (CES) \$1,000,000

Outreach to Disadvantaged Farmers/Ranchers	1,000,000
--	-----------

PRIOR INITIATIVES:

The Navajo Nation is pleased we are building upon the results of our initial efforts (FY 1993) with the House and Senate Agriculture Appropriations Subcommittees regarding Navajo funding priorities. Report language was included last year by both Subcommittees recognizing our unique circumstances and critical needs (see attachment A).

Spurred by the Senate and House report language and the support of the former Secretary of Agriculture, working relationships were developed and strengthened with certain of the field and State offices of SCS and ASCS. Later in our testimony we describe in greater detail our emerging cooperative relationship with USDA. SCS and ASCS now recognize the enormous needs of the Navajo Nation and have done their best to stretch scarce dollars and accelerate their provision of assistance. In FY 1994, we recognize these efforts - if they are to continue - need additional resources. CES, FmHA and RDA, also require additional funds in order to move forward and make meaningful progress in alleviating years of federal neglect of the Navajo Nation's resource conservation, rural infrastructure and natural resources education needs.

### THE NAVAJO NATION:

The Navajo Nation is unique among American Indians. The Navajo Nation encompasses almost one-third of all Indian lands in the lower 48 states, with a land area covering nearly 18,000,000 acres (as large as the state of West Virginia) of arid and semi-arid mesas and valleys in northeast Arizona, northwest New Mexico and southeast Utah. The Navajo Nation spans portions of twelve counties in these three states, which creates unique challenges for the consolidation of the traditional USDA county-based service delivery system to provide more effective and streamlined Navajo access to USDA assistance.

The Navajo Nation suffers from enormous deficits in all areas critical to prosperous rural livelihoods and well-being. Fifty-six percent of Navajo people live below the poverty line. Half of our people live in substandard homes without running water or electricity. Unemployment ranges from 38 percent to 50 percent, depending on the season. Navajo rangelands, farmlands and rural communities are today well below their potential for economic and social productivity, due to federal investments far below those enjoyed by other rural areas of America in natural resources conservation and management, as well as, rural, physical, economic and educational infrastructures.

### NAVAJO NATION RURAL DEVELOPMENT NEEDS:

The Navajo Nation appreciates that the USDA is the Congressionally-mandated lead federal agency for rural development. Despite this mandate, the USDA has never played a lead role to address the Navajo Nation's rural development needs. What is lacking is explicit policy direction and guidance of Congress to encourage the USDA to exercise fully its responsibility to lead and coordinate phased, multi-year, aggregated federal rural development assistance, targeted to the Navajo Nation and other Indian tribes. We respectfully request that Congress state this policy through report language.

- 1). Water and Land Resources (\$1,694,000 for SCS-Watershed Planning and \$1,200,000 for ASCS-Conservation Projects):

Our request for a fulltime SCS Watershed Planning team (\$400,000) will greatly benefit the Navajo people and will have significant benefits for the USDA. Downstream water users will also gain by the reduction of salt and sediment loading of the Colorado River system and protection of water quality. Each year hundreds of thousands of acre-feet of water cascade off of Navajo watersheds into the Little Colorado, San Juan and Colorado Rivers. The Navajo Nation is the single largest contributor of salt-laden sediment to these rivers.

The SCS has now begun preliminary planning for one sub-watershed project by assigning (within the limits of available resources) technical staff when and as available. However, the enormity of the Navajo Nation land area, and the severity of our chronic soil and water conservation problems, require a more concentrated and accelerated approach.

Similarly, the Navajo Nation's request of \$504,000 for short-term Critical Area Treatments (administered by SCS) and \$1,000,000 for Conservation Special Projects (administered ASCS) will enable the Navajo Nation: to establish improved management methods and facilities on 88,000 acres of rangeland watershed; to retain annually at least 3,000 acre-feet of sediment, which otherwise would impair downstream domestic water supplies, irrigation facilities and wildlife habitat; and, to conserve more than 6,000 acre-feet of our precious water resources for beneficial use on 3,725 acres of farmland.

Also, in order to provide adequate technical support for the implementation of these conservation measures, full staffing by SCS of six Navajo soil and water conservation districts, and additional water resources staff at our SCS Area office will be required. We estimate that \$790,000 will be needed. Additionally, the ASCS will need additional funds, estimated at \$200,000, to open an office serving the Navajo Nation, as previously announced by the former Secretary of Agriculture (see attachment B).

2). Physical Infrastructure (\$11,719,000 for FmHA/RDA-Planning and Construction):

Rural Development Planning: The Navajo Nation is requesting appropriations of \$500,000 to the RDA (which has taken over the rural development responsibilities of the FmHA) to provide for comprehensive community and area-wide rural development, economic development, water development and waste disposal planning on the Navajo Nation. These will establish the basis for multi-year phased aggregated investments to eliminate the Navajo Nation's enormous rural development deficit.

Comprehensive rural physical infrastructure needs assessment or planning have never been conducted on the Navajo Nation. In the era when the FmHA was providing rural development planning grants, the Navajo Nation was unaware it could apply. Now that we are beginning to turn to the USDA, Congress is no longer appropriating funds for area planning or comprehensive rural development planning. Yet, federal investments in Indian rural development infrastructures (roads, housing, power, telecommunications, water systems and waste disposal) continue to be far below levels of investment in other rural areas.

Solid Waste Disposals: The Navajo Nation this year is prioritizing solid waste disposal and irrigation rehabilitation, of our many rural development infrastructure needs. The Navajo Nation is requesting appropriations of \$5,200,00 to the RDA for the construction of two solid waste landfills, with satellite transfer stations, to meet the present and future needs of forty Navajo communities in the Arizona and Utah portions of the Navajo Nation. The Navajo Nation does not have any solid waste land fills or other waste disposal facilities in compliance with United States Environmental Protection Agency standards. While some Navajo communities and institutions are transferring their solid wastes to complying facilities in New Mexico and Colorado, this solution is short-term for those able to afford it, and does not address the underlying need for a comprehensive solid waste disposal and management plan for the Nation.

Irrigation Water Systems: The Nation is requesting appropriations of \$5,769,000 to allow for the complete reconstruction of irrigation systems serving 20,355 acres in twenty-six Navajo communities. There are more than 45,000 acres of irrigated family farms on the Navajo Nation. Up to two-thirds of these farmlands are idle or below optimal productivity today due to damage and destruction to irrigation facilities by flooding and sedimentation. The rehabilitation of irrigation systems is perhaps the single most cost-effective investment for the revitalization of Navajo rural livelihoods and economy. To our knowledge there have never been any appropriations for the specific authorization in question (7 USCS 2204(c)).

Congressional direction and guidance are needed to streamline Navajo Nation and other Indian tribes' access to RDA/FmHA programs of all kinds, especially water system and waste disposal system funding. In furtherance of our efforts to consolidate and streamline USDA service delivery to the Nation, we are requesting \$250,000 to establish an RDA office on the Navajo Nation, to coordinate and facilitate rural development activities throughout our 18,000,000 acres. Additionally, the Navajo Nation request report language which stipulates that USDA-RDA make available their own staff through Interagency Personnel Agreements to help the Navajo Nation plan and organize for rural development, and to coordinate access to the bewildering diversity of federal rural development programs beyond those administered by USDA.

3). Educational Infrastructure (\$1,000,000 for CES-Extension Outreach):

As an intermediate step to increase the capacity of the Navajo Community College (NCC) to conduct Land Grant Institute types of programs, the Navajo Nation is requesting appropriations of \$1.0 million, as authorized under section 2501(a) of the 1990 Farm Bill (Pub.L. 102-624), to strengthen NCC's extension education and outreach to benefit our farmers and ranchers with technical assistance, field demonstrations, and clarified access to USDA farm service programs.



Navajo and other Indian rural communities are chronically and critically short of skilled professional and technical personnel needed to plan and implement all aspects of rural development. The BIA education system is among the worst in the country. The Navajo Nation needs the means to redevelop and rebuild our own educational systems, grounded in our language and cultural values and targeting needs we define.

The national Land Grant Institute system has proven enormously beneficial for the rest of the United States -- including not only the 50 states, but also the historically Black colleges and universities, and the very small land areas of Guam, Puerto Rico, the Virgin Islands, and even Washington D.C. Yet Indian people, by comparison, with 50 million acres in the lower 48 states and economies nearly entirely dependent on natural resources, are not well served by the existing Land Grant Institute system.

It is time that Congress afford Indian people the same rural education, extension and research benefits afforded the rest of the rural United States. The Navajo Nation has started to urge the authorization and establishment of an Indian Land Grant Institute analogue. The Indian "Land Institutes" should be built onto existing Indian community colleges -- starting with the Navajo Community College as a pilot -- and must provide for the development of culturally-based four year and graduate programs in all natural resources, rural development, and associated rural enterprise and business fields.

#### NAVAJO NATION/USDA COOPERATIVE RELATIONSHIP:

In an effort to realize the USDA's rural development mandate for Indian tribes as well as for the rest of rural America, the Navajo Nation conceived, and in 1992 took the first steps toward implementing, a phased multi-year integrated program of planning, resource conservation, education and training, and rural development -- focusing on an enhanced cooperative relationship with the USDA, and with the House and Senate Agriculture Appropriations Subcommittees.

Administratively, we worked directly with former Secretary Madigan and his staff toward streamlining USDA service delivery to the Navajo Nation. Considerable progress has already been achieved in that regard with the SCS, whose Chief and top water resources staff visited the Nation in July of 1992, and saw for themselves the magnitude of our resource conservation needs. The ASCS, FmHa, RDA and CES also have evidenced a willingness to adapt their program delivery systems to the unique jurisdictional issues of the Navajo Nation. Some promising initiatives were cut short, however, by the change in administrations, and we are awaiting the appointment and confirmation of new ASCS, FmHA and RDA Administrators to resume our momentum.

Consolidation and streamlining of service delivery systems is only a first step. Much additional work is required to gain the full active commitment of these agencies to address in coordinated and systematic fashion the accumulated backlog of unmet Navajo Nation needs in the areas of resources conservation, integrated rural development, and natural resources education, research and extension.

The foundation for our expanding cooperative relationship with the USDA has been USDA's recognition of its own federal trust responsibility to the Navajo Nation (and other American Indian tribes), as well as, the beginning of USDA treatment of the Navajo Nation as a government through government-to-government agreements and allocations of technical and financial assistance commensurate with the magnitude of Navajo Nation needs.

#### CONCLUSION:

In conclusion, the Navajo Nation wishes to thank the Subcommittee for the support provided last year and we look forward to working with the Subcommittee on the funding initiatives proposed in this testimony.

(Attachment A)

HOUSE APPROPRIATIONS COMMITTEE REPORT - AGRICULTURE FY 1993  
APPROPRIATIONS

At page 72 of its Report (No. 102-617) on FY 1993 agriculture appropriations, the House Appropriations Committee last year recognized our needs, commenting specifically "the Committee is ... aware of the interest in providing additional technical assistance for range management to the Navajo Nation ..." .

SENATE APPROPRIATIONS COMMITTEE REPORT- AGRICULTURE FY 1993  
APPROPRIATIONS

Likewise, the Senate Appropriations Committee stated in its Report (No. 102-334) on agriculture appropriations:

"The Committee notes the Navajo Nation's proposal to establish a planning team to begin evaluating cost-effective solutions to the Navajo Nation's watershed resource conservation needs. The Committee encourages SCS to assist with this effort."  
(Page 70)

"In addition, the Committee encourages SCS to assist the Navajo Nation by providing support for critical area treatments to address severe localized soil erosion and water conservation concerns." (Page 73)

## STATEMENT OF NEW MEXICO STATE UNIVERSITY

The Center for Sustainable Development of Arid Lands offers a tremendous opportunity to positively address some serious issues for the Southwest and for our nation. The Center will foster mainstreaming ethnic minorities into our scientific community by providing quality teaching facilities. The Center will address the press of urbanization and other development on our fragile desert ecosystems by providing quality research and diagnostic facilities. The Center will encourage international competitiveness of our agricultural industry by promoting harmony between agriculture and the environment. The Center will foster international scholarship in the region, even as the area becomes a critical zone of international commerce among the Americas.

New Mexico State University is the optimal place to develop the Center because of the university's history, its human composition, its geographical location, and its organizational culture. The Center for Sustainable Development of Arid Lands at New Mexico State University will address the woefully inadequate teaching, research, and diagnostic facilities serving a population and region representing some of our nation's best hope for social and economic development in the setting of a fragile environment.

NMSU cannot rehabilitate aging and short-spaced facilities to contemporary standards. As a result, NMSU cannot adequately respond to the region's challenges and opportunities.

NMSU is in a unique position to bring high technology to bear on arid lands issues. NMSU is the land-grant university in a state with two national laboratories and numerous military facilities. NMSU, through Technet, is on the national electronic highway, with two Centers for Technical Excellence. White Sands Missile Range has had a close relationship with the university since World War II, particularly through the NMSU Physical Sciences Laboratory.

NMSU is working with a Mexican arid lands consortium to create a regional agenda and it continues its association in the International Arid Lands Consortium with the University of Arizona, the University of Illinois, South Dakota State University, and Texas A&I University. These consortia will benefit from the enhancement of arid lands work at the Center.

NMSU is a prime institution for educating an ethnically diverse student body to become part of the scientific community. NMSU reflects the diversity of the New Mexico population with more than four in ten freshmen being ethnic minorities.

Since 1987, the number of Indian, Hispanic, and African American students has risen 77, 47, and 28 percent, respectively. The Hispanic student body has increased by 1,500 students in that time. The 54 Native American students majoring in the College of Agriculture and Home Economics are said to be the greatest percentage of Indian students majoring in any land-grant agricultural college in the nation.

The university has grown with New Mexico. Much of its growth is quite recent, which accounts for a student body that reflects the state of New Mexico and a young and energetic faculty.

NMSU has a history of accessibility and it has become the university of choice of New Mexico residents. Even as the number of New Mexico high school graduates declined in recent times, NMSU grew at several times the rate of the other New Mexico universities -- accounting for 60 percent of the growth in higher education in the state. Already about 50 percent female, the student population of the university increasingly reflects the state's ethnic make up with every new freshman class.

Meanwhile, tenured and tenure-track faculty have undergone change. Since 1987, Hispanic faculty numbers have increased 58 percent and female faculty 77 percent. Today, the tenured and tenure track faculty is more than 13 percent ethnic minority and more than 19 percent female. The tenure-track faculty in the College of Agriculture and Home Economics is 42% female.

NMSU brings scholarly excellence together with a diverse student body. Today, NMSU is the only Hispanic serving institution -- an institution with more than 25 percent Hispanic student body -- that also is a Carnegie Foundation Category I Research Institution.

The state of New Mexico recently became a "minority/majority" state in which no single ethnic group makes up a majority of the population. The state has been dubbed the nation's most diverse based on the probability of any two randomly selected citizens being of differing ethnic backgrounds.

NMSU enjoys excellent support from the state of New Mexico. Despite ranking in the bottom five or six states in per capita income, New Mexico ranks in the top 10 percent in per capita contributions to higher education. The New Mexico Legislature has passed four memorials during the last two years expressing support for the Center for Sustainable Development of Arid Lands to be constructed on the NMSU campus. The NMSU Board of Regents has endorsed the construction of the Center as a top university capital priority.

NMSU is a highly effective, networked organization in an era when networks across disciplines, colleges, universities, and national borders are essential to success. The multi-ethnic nature of the university has made it a very attractive location for foreign scholars. Many of the senior faculty and administrators of Mexican universities are alumni of NMSU, which is the closest land-grant university to the Mexican-American border.

Mexico and New Mexico share the same arid land resources, but also many of the same mix of peoples and development challenges. The domestic and international agenda, therefore, is in many ways interchangeable. The arid rangelands of the Southwest represent the world's most common land type. The College Ranch is adjacent to the USDA/ARS Jornada Experimental Range, creating a vast outdoor laboratory with generations of documented data. Science in this laboratory is conducted by NMSU scientists from 10 departments in two colleges and has attracted scholars from around the world. USDA Agricultural Research Service researchers hold adjunct faculty appointments in the College of Agriculture and Home Economics.

In an era when organizations are coping with the transition from rigid departmentalized structures to the contemporary networked organization. New Mexico State University profits by finding itself already network oriented. To a great extent, historically lean funding made the development of independent

entities within the university infeasible. Instead, resources had to be shared across organizational lines to create functional programs. Even academic departments in the university tend to incorporate a broad array of disciplines, making research within departments interdisciplinary in nature. There is a strong tradition of interdepartmental and inter-college programming as well.

For example, cross-listing of courses among several departments in separate colleges is common and traditional practice at NMSU. Faculty from departments in the College of Agriculture and Home Economics serve as graduate faculty in other departments within the College and in other NMSU colleges. The molecular biology graduate program includes faculty from two colleges led by the graduate dean, the dean of Arts and Sciences, and the dean of the College of Agriculture and Home Economics. The establishment of the Plant Genetics Engineering Laboratory as a State Center of Technical Excellence at NMSU, created the initial impetus for the molecular biology program. A core of eight faculty was hired in five departments in two colleges to support the laboratory in 1985. Since that time, molecular biologists associated with the molecular biology program have doubled, and several departments have hired young faculty with molecular skills. The Department of Experimental Statistics and the University Statistics Center are components of the College of Agriculture and Home Economics which serve the entire university community.

In short, programming in cutting edge science has developed not as a result of establishing a rigid base for research focus, but by allowing various departments to participate in a research and teaching focus, while still relating to traditional disciplines. The Center for Sustainable Development of Arid Lands extends the same principle for effective interdisciplinary work. The Center will attract teachers, researchers, and Extension education professionals to a common set of tools. As a result, a wide variety of outlooks will be drawn to share common interests. The Center will not be the province of those who are interested in agricultural production alone, or ecological integrity alone. Rather, it will serve to meld these interests in common scientific endeavor.

What is needed to make this dream a reality is quality space for teaching laboratories, research laboratories, diagnostic laboratories, and other teaching facilities.

The Center will address the problems of arid lands development through scholarly activity, cutting across many of the traditional barriers that limit the effectiveness of scholarly activity. The Center will serve to bring together working groups that address research, instruction, and Extension education functions across traditional boundaries of disciplines, departments, colleges, ethnicity, states, and nations.

Any inability to establish harmony between the goals of the agricultural industry and the ecological integrity of our natural resources will result in decline of both industry and the environment. The future of agriculture and natural resource management depends on the ability to address resource and environmental concerns of water quality and quantity, urbanization, bio-diversity, ecosystem integrity, and economic use of resources. The ability to maintain a quality environment is fundamental to the international competitiveness of our agricultural industry.



A summary sheet is attached outlining the Center for Sustainable Development of Arid Lands.

For more information, contact:

John C. Owens  
Dean & Chief Administrative Officer  
College of Agriculture & Home Economics  
Box 30003, Dept. 3AG, NMSU  
Las Cruces, NM 88003  
(505) 646-3748

#### CENTER FOR SUSTAINABLE DEVELOPMENT OF ARID LANDS New Mexico State University

This project represents a proposed joint effort between the USDA and the State of New Mexico to construct and operate a specialized research and teaching facility at New Mexico State University. The proposed center would provide state-of-the-art laboratories, classrooms, and support space for development of interdisciplinary studies of agricultural and natural resource challenges facing our western region.

The project would be jointly funded by state and federal dollars. The actual facility is proposed to cost \$22,000,000 of which the state of New Mexico would fund \$11,000,000 and the United States Government would fund \$11,000,000. Due to restrictions on the use of these funds for internal costs, infrastructure or movable equipment, it is necessary to seek an additional \$5,500,000 in state funding. This brings the total project cost to \$27,500,000 of which \$16,500,000 would be state of New Mexico funds and \$11,000,000 would be federal funds.

The proposed facility would be approximately 150,000 total square feet with supporting facilities, such as greenhouses, insect-rearing chambers, and small animal care facilities adjacent to the primary building.

The functions proposed for inclusion in the facility itself are:

- Department of Agronomy and Horticulture
- Department of Entomology, Plant Pathology and Weed Science
- Plant Genetic Engineering Laboratory
- USDA Agriculture Research Service, Jornada Experimental Range
- Cooperative Extension Plant Sciences Department
- Remote Sensing Geographic Information Laboratory
- University Electron Microscope Facility
- Entomology Reference Collection Laboratory, Herbarium, and Pest Diagnostic Laboratory
- Molecular Biology Program Expansion
- Soil, Water, and Air Testing Laboratory
- General Purpose Classrooms and Teaching Laboratories

The scope of the work funded by the additional \$5,500,000 from the state of New Mexico includes the expansion of campus utility systems to the site, upgrade of the College Avenue entrance, movable equipment, internal effort, and expansion of the campus central utility plant.

## NORTH AMERICAN STRAWBERRY GROWERS ASSOCIATION

## STATEMENT OF TIMOTHY M. NOURSE, CHAIRMAN, LEGISLATIVE COMMITTEE

## SUMMARY OF

## PROBLEM AREAS IN STRAWBERRY PRODUCTION FOR WHICH URGENT RESEARCH NEEDS EXIST

The following requests are the Research priorities required by the industry for strawberry research. The strawberry industry acknowledges all the past advances provided to us by USDA, Beltsville. As we are familiar with the current programs at Beltsville and the research requirements for our industry, we perceive that the following increase to the Beltsville program is essential to maintain a strong Eastern U.S. Strawberry Industry. Realizing the difficult budget constraints, we have prioritized the funding in order of most importance beginning in 1994:

- I CONTINUING USDA/ARS PROGRAM SUPPORT (\$ 900,000)
  - A. Cooperative Breeding Programs
  - B. Plant Disease Research
- II REDUCTION OF PESTICIDE USE (New Programs, \$ 300,000)
  - A. New Virology Position (\$ 200,000)
  - B. Anthracnose Research (\$ 50,000)
  - C. Insect Resistance (\$ 50,000)
- III BIOTECHNOLOGY and CROP GENETICS (New Programs, \$ 250,000)
  - A. New Molecular Geneticist Position (\$ 200,000)
  - B. Genetic Diversity and Variety Development (\$ 50,000)

## SECTION A

The North American Strawberry Growers Association (NASGA) recommends that \$ 800,000 be added to the budget of the USDA Agricultural Research Service for strawberry research in the Small Fruit Crops Improvement Program. NASGA requests funding beginning with the 1994 fiscal year. NASGA supports this new funding over and above the current minimum level of approximately \$ 649,100.

Current levels represent a decrease of \$ 790,000 or 50% since 1988. Eastern U.S. Strawberry Growers urgently need the following:

URGENT NEEDS	FISCAL YEAR FUNDING LEVEL		
	1994	1995	1996 & cont
CONTINUING PROGRAM SUPPORT			
(USDA/ARS)	\$ 900,000	\$ 985,000	\$ 1,100,000
REDUCTION OF PESTICIDE USE			
A. New Virology Position	\$ 200,000	\$ 200,000	\$ 250,000
B. Anthracnose Research	\$ 50,000	\$ 50,000	\$ 50,000
C. Insect Resistance	\$ 50,000	\$ 50,000	\$ 75,000
BIOTECHNOLOGY and CROP GENETICS			
A. New Molecular Geneticist	\$ 200,000	\$ 200,000	\$ 250,000
B. Genetic Diversity	\$ 50,000	\$ 50,000	\$ 75,000
TOTALS	\$ 1,500,000	\$ 1,535,000	\$ 1,800,000

JUSTIFICATION - The U.S. is the world leader in strawberry production with 20-25 percent of the total world market. Strawberries are a healthy and nutritious food. They contain high levels of vitamin C and fiber but are low in calories (55 calories

per cup) and sodium. Recent research at the USDA/ARS Small Fruit Crops Improvement Program at Beltsville, MD found that the level of ellagic acid, an anticancer agent found in strawberries, may be increased through breeding.

Strawberry production supports sustainable agriculture. Currently strawberry growers use Integrated Pest Management (IPM) techniques that have reduced pesticide use by 40% or more. Our proposal for increased funding would support the continued reduction of pesticide use. This support is essential for the many family farms in the U.S. that produce strawberries.

Our members produce strawberries in 36 different states. Eastern U.S. Strawberry production (this area is east of the Rocky Mountains and north of Florida) is involved with 12,150 acres producing a value in excess of \$60,000,000.00. Many consumers benefit with our Eastern Strawberry Production by utilizing Pick Your Own. Hundreds of thousands of consumers take part in the activity.

Strawberries have unique problems associated with production, pest control and marketing. NASGA members tax themselves and have provided in excess of \$250,000 over the last ten years, to support pertinent and timely research at the USDA/ARS in Beltsville and other experiment stations throughout the U.S. Unfortunately, funding at the Federal level has dropped dramatically in the last few years and NASGA is highly concerned about this pattern.

The strawberry industry looks to the USDA/ARS in Beltsville for leadership and it is urgent that their research support be increased. Please consider support for the following new programs that will pay dividends many times over.

CONTINUING PROGRAM SUPPORT - to maintain current programs and confront urgent research needs of the U.S. strawberry industry.

NASGA also recommends a modest increase in continuing program support. (USDA/ARS)

A. Cooperative Breeding Programs: A strong strawberry industry today is predicted on timely research support and breeding programs in the past. NASGA has encouraged and supported in part the award winning USDA/ARS research at Beltsville and other cooperating facilities. We must return to at least the 1988 funding levels. Scientists without technical help and equipment are hindered in achieving the high level of performance desired. The need for new varieties and cooperative evaluation of native and exotic germplasms are intrinsic components of the Small Fruit Crops Improvement Program of the USDA/ARS in Beltsville.

B. Plant Disease Research: The plant breeder cannot work in a vacuum. The plant pathologist tries to understand all aspects of disease development. This knowledge is essential in selecting genes that provide various levels of resistance in different environments. Disease prediction programs and Integrated Pest Management also require vast amounts of fundamental knowledge.

More than 100 different fungi and over 15 virus and virus-like pathogens infect strawberries. The plant pathologist must be able to distinguish these from the injury caused by more than 200 strawberry insects. The overall result can be the development of successful non-chemical pest control for the benefit of growers and consumers alike.

REDUCTION OF PESTICIDE USE - to reduce the use of pesticides through the development of new disease and insect resistant varieties and screening for and elimination of virus infections.

- A. New Virology Position: Strawberries are prone to virus diseases some of which significantly reduce yields but show few other visible symptoms of infection. Most growers use certified nursery plants that are free of known viruses and they keep them from one to many years in the field. Because viruses may be transmitted to other plants by aphids or other insects, growers often need to apply insecticides to prevent the spread of infection.

Indexing techniques to detect viruses in plant tissue were developed in the 1950's. New techniques involving tissue culture and nucleic acid "probes" are already available to study and detect viruses in other crop plants.

Dr. Richard Converse, the principle strawberry virologist in the U.S., retired in Sept. 1990 and was not replaced; nor was Dr. John McGrew in Beltsville, MD who retired earlier. The importance of strawberry virus research cannot go unrecognized. For the USDA or any breeder to release a new variety, it must be confirmed that no viruses are present in the propagation material.

- B. Anthracnose Research: "Anthracnose" is a complex of fungus diseases that damage strawberries in the Eastern United States. Many southern nurseries have gone out of business due to this devastating disease.

The disease is spreading northward and threatens plant nurseries in the Northern U.S. also. Breeding programs for anthracnose already exist, but they are not adequate since the anthracnose pathogen has many types and these invade the strawberry plant at different sites.

Suitable genetic resistance for anthracnose is therefore much more difficult to find and additional pathological studies are needed to prevent the spread of the fungus into cooler northern areas.

- C. Insect Resistance: For sustainable agriculture, it is essential that plants be resistant to insects. In the past, insecticides were readily available for the control of insects that damage strawberries. Therefore, our knowledge of genetic resources and their incorporation into resistant varieties is currently very limited. In addition, fewer pesticides are available and there is greater interest in reducing production costs and the environmental impact of any chemicals still available to us. Certain insects can be monitored and sprays may be eliminated, but insecticides still play an important role in strawberry production. Every effort should be made to develop insect resistant varieties that will strengthen IPM programs nationwide.

BIOTECHNOLOGY and CROP GENETICS - To improve varieties through the application of current molecular biotechnology and utilization of new genetic resources.

- A. New Molecular Geneticist Position: Strawberry varieties need to be improved continuously in order to satisfy the needs of consumers as well as allowing growers to produce strawberries economically. The molecular geneticist has wonderful new tools to increase the rate of plant improvement. For example, pieces of genetic material carrying useful genes can be attached to gold particles and "shot" into hosts with a

"gene gun". The molecular geneticist will develop an understanding of the total strawberry genome including nuclear, mitochondrial and cytoplasmic genes and determine ways to transfer them. The genes for pest resistance, reduced water or fertilizer use, increased photosynthetic ability and strawberry fruit size are major topics for investigation. This scientist would cooperate closely in the standard breeding and variety evaluation program.

- B. Genetic Diversity and Variety Development: Vast sources of native and exotic strawberry germplasms have been collected from North and South America in the last few years. These plants need to be maintained, characterized as to type and incorporated in the USDA cooperative breeding program. In the U.S., there are over 134 varieties of strawberries, but only 17 parents are used as genetic sources.

This lack of genetic diversity is of great concern due to the potential for catastrophic pest outbreaks. In addition, it is a limiting factor in finding other valuable genetic traits. The strawberry germplasm collections are a major resource for the molecular geneticist mentioned above.

#### SECTION B

Strawberries are grown commercially in 36 states; the top producers being: California, Oregon, Florida, Washington, New York, Michigan, North Carolina, Pennsylvania and Ohio...a dramatic shift in location since the 1940's.

The far west grows 76% of U.S. production on 43% of the acres; the mid-south grows 13% on 24% of the acres; and, the central and N.E. states combined produce 11% on 33% of the acres...85% is sold fresh, 15% is processed.

There are roughly 5000 commercial growers with 44,950 acres that produced 533 tons of strawberries in 1988, an increase in production of 98% since 1974. Gross returns exceeded \$ 537 million in 1988, up 223% since 1974.

Eight out of ten households purchase fresh strawberries during the season and one out of seven households buys strawberries from local farms. Per capita consumption increased rapidly and is now more than 3.0 pounds per person. Consumers who freeze and make jams and jellies consume even more.

Over 70% of strawberries grown in the central and N.E. states are harvested by pick-your-own customers on farms. Between 7.6 and 10.0 million consumers patronize farms to buy home-grown strawberries.

Strawberry farms are among the most intensive and innovative in the U.S.. High levels of management and investment are required. In the central and N.E. states, an investment of \$ 3,500 per acre is required to grow the crop until its first harvest. The per acre start-up values for Florida and California are at least \$ 6,500 per acre. The extra cost is due to plastic mulch, soil fumigation, plant stocks and labor required for an annual cropping system. The average strawberry farm in Illinois is 4.8 acres per farm.

Strawberries are the number eight export crop of all U.S. produce, exceeded only by grapes and apples of the non-citrus fruits.

Although as many as 50 varieties are grown in the U.S., an estimated 90% of the commercial acreage is limited to nine of ten varieties. Most varieties are replaced by improved ones in less than 15 years.



Strawberries are the first aromatic taste of spring. One-half cup serving of strawberries contains the recommended daily allowance of Vitamin C. and more fiber than a slice of whole wheat bread. In addition, strawberries contain substantial amounts of Vitamin A and traces of thiamin, riboflavin, niacin, Vitamin E, calcium, phosphorus and ellagic acid (an anti-cancer agent).

Strawberries add flavor, food value and pleasure to meals and snacks. They ripen in short local seasons of about 30 days but are available during nearly every month of the year in supermarkets from California and Florida.

## NORTH CENTRAL REGIONAL AQUACULTURE CENTER

## STATEMENT OF TED R. BATTERSON, DIRECTOR

Thank you Mr. Chairman and Members of the Subcommittee for allowing me this opportunity to submit testimony on behalf of the Regional Aquaculture Center Program. I am director of the center that serves the industry and consumers in the 12 states of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. This fertile section of the country produces abundant grains and soybeans that can be processed for fish feeds. We also have spectacular water resources for aquaculture within our boundaries. These include U.S. portions of four of the five Great Lakes, and rivers and streams that make up the Missouri, Ohio, and Upper Mississippi River drainages. The 59.7 million people residing in this region are mainly concentrated on these water bodies. They have a long tradition of using fish as a major source of protein in their diets.

In 1991, an estimated 890 million pounds of commercially caught fish and shellfish were consumed by residents of the North Central Region. On the supply side, less than 5% of regional consumption can be accounted for by commercial capture fisheries and aquaculture ventures from our lakes and rivers. Consequently, fish consumption in the North Central Region was a major factor in the \$3.27 billion U.S. trade deficit in fish products reported by USDA for 1991.

Fish consumption has become expensive for people in the North Central Region. Demand has risen in response to increasing awareness of health benefits derived from fish in the diet. Fish from traditional U.S. ocean fisheries are being consumed by increasing populations in coastal states. The supply of reasonably priced, good quality ocean products to our inland markets has diminished substantially over the last decade. Prices for fish in our grocery stores and on menus in our restaurants have spiraled upward. Meanwhile, much of the recreationally caught fish are environmentally contaminated and could potentially be a health risk.

If I may suggest, Mr. Chairman and Members of the Subcommittee, the time is clearly at hand to move aggressively to increase regional aquaculture production using our many water resources that are not contaminated. We also need processing technology and market development programs to make use of new and non-traditional aquaculture species and products.

The aquaculture community of the North Central Region is very appreciative of the steps Congress has taken to improve our fish supplies and reduce the trade deficit in fish products. USDA's Regional Aquaculture Center Program is one such initiative. The North Central Regional Aquaculture Center (NCRAC) works with four other centers on an integrated approach to a well developed and sustainable aquaculture industry in the U.S.A. and its territories. Programs of the centers are driven by needs of regional industries, articulated through strong Industry Advisory Councils. Top-notch teams of research and extension specialists from universities and public agencies in the North Central states began executing work plans to solve problems of the industry in May 1989. Work is accomplished using in-place people and facilities. No expenditures are made on brick-and-mortar or institutional overhead. At this time, NCRAC has ten projects on-line. They involve each of the 12 regional states, 38 aquaculture scientists and extension people, and 16 universities and public agencies. Analysis of economics and marketing, statutory policy in our states, and genetic improvement of regional strains of cultured trout, walleye, yellow perch, and sunfish are thrusts of the program. Improvement of technology for regional culture of hybrid striped bass is also underway. New projects on crayfish, bait fish, and aquaculture waste have recently gotten underway. Aquaculture specialists in USDA's Cooperative Extension Service are making information from these projects available in the region and across the country.

While a good start has been made to serve needs of the industry and consumers, additional regional problems of high concern are left unattended. Least-cost nutrition for newly cultured species, policy for genetic engineering of cultured fish, and fish health and food safety are among them. On hold, is a large pool of expertise in our publicly funded universities and agencies that can deal with these concerns.

Mr. Chairman, and Members of the Subcommittee, thank you for your support of the Regional Aquaculture Center Program. Funding over the past years has been put to good use in this program. We respectfully request that funding at the authorized level of \$7.5 million be provided so that this important program can conduct the full range of activities necessary for development of the industry and continued reduction of our large trade deficit.

UNIVERSITY OF NORTH DAKOTA  
STATEMENTS OF DR. KENDALL BAKER, PRESIDENT  
INSTITUTE FOR HEALTH SCIENCES AND RURAL MEDICINE

SYNOPSIS

The University of North Dakota is requesting \$1.5 million in Fiscal Year 1994 to complete the federal share of funding for the establishment of the Institute for Agricultural Health Sciences and Rural Medicine. The Institute will consist of three interconnected buildings, a new Research Facility (\$10.36 million), a new Bio-Information Learning Resources Facility (\$4.41 million), and the renovated Science North building (\$8.42 million), for a total Institute cost of \$23,190,000. Congress has appropriated through Fiscal Year 1993 \$8.86 million to the USDA for the Research Facility. The other two buildings will be funded through private, non-federal funds.

BACKGROUND:

The mission of the Institute is to address health prevention, research, human nutrition and safety issues of particular concern to farmers and rural residents. The initial funding request fell \$1.5 million short due to unanticipated USDA administrative costs and the mechanical and electrical bids associated with the project. Funding for the three components of the Institute are interdependent; therefore, it is essential to receive the final \$1.5 million from the federal government to ensure the balance of funding from private and corporate funds.

Since the initial Fiscal Year 1991 funds were appropriated, officials of the University have worked with representatives of the Department of Agriculture toward the establishment of the Institute. A grant application was completed and returned to the agency on February 7, 1991, which was followed by a site visit by a Cooperative State Research Service review team on April 22-24, 1991, culminating in the award of \$2,805,240 as the initial federal share. Subsequent appropriations of \$4,249,570 in Fiscal Year 1992 and \$1,808,080 in Fiscal Year 1993 were approved by Congress.

In addition to the federal funds provided for this project, the Congress also recognized the need for this type of research when it included statutory language in the Food, Agriculture, Conservation Act of 1990 which authorizes the USDA to conduct research which will "enhance human health by assisting farmers and other rural residents in the detection and prevention of health and safety concerns." (Public Law 101-624, Section 1402(6)(2)). In the same bill, Congress also established authorization for Rural Health and Education and Rural Health Infrastructure Improvement.

Establishment of the Institute will create a significant number of jobs. In the short term, some 160 new construction jobs will be created. Within several years, opportunity will be provided for some 12-14 Ph.D and some 6-8 M.D. research faculty to be employed, which will require some 20-25 B.S. and M.S. technical research support persons and 10-12 clerical positions. In addition, opportunity for the employment of some 30 additional mid-level support persons in fields of research, biomedical communications, computer assisted instruction, distance learning, rural health services and the library, will be created.

## IMPACTS OF AGRICULTURAL CHEMICALS ON GROUNDWATER QUALITY IN THE NORTHERN GREAT PLAINS

### PROJECT SYNOPSIS

#### Description

The University of North Dakota (UND) requests \$1.0 million in FY94 for the "Impacts of Agricultural Chemicals on Groundwater Quality in the Northern Great Plains" program for the UND Energy and Environmental Research Center (EERC). The objective of this groundwater research program is to understand the occurrence, transport, and fate of agricultural chemicals in representative settings so that we can apply that understanding to conserve and protect our critical irrigation and drinking water resources, increase agricultural efficiency, improve chemical management practices, and provide a scientifically valid basis for meaningful regulation of agricultural chemicals.

### APPROACH

Abundant, good quality water is critical to maintaining the high quality of life to which we have become accustomed. Groundwater provides for the water needs of 90% of our rural population and 50% of our urban population and accounts for 99% of our total freshwater resource. This research program focuses on the impacts of agricultural chemicals on our groundwater, because groundwater is the medium for subsurface chemical reactions and contaminant transport and because groundwater is particularly vulnerable to contamination from a wide variety of activities, including agriculture. Our approach to understanding the occurrence, transport, and fate of agricultural chemicals in the groundwater environment and ultimately applying that understanding in a practical manner demands research within the complete environmental context. That context includes the climate, the three-dimensional matrix of earth materials, the water flowing over and through those earth materials, and the behavior of substances such as agricultural chemicals that may be introduced into the landscape. Even though 99% of our water resource is below the water table, most agronomic research has focused on near surface root-zone processes high above the water table, and traditional hydrologic research has concentrated on surface water, leaving a critical gap in our understanding of groundwater vulnerability. This research program bridges that gap and is providing data critical for understanding the occurrence, transport, and fate of agricultural chemicals along the entire pathway from land surface, through the root zone, downward to the water table, and ultimately through the saturated zone from which we draw drinking and irrigation water.

### MAJOR FINDINGS

Key findings from the current research program, significant to both the agricultural industry and regulatory agencies, are briefly summarized below.

#### Shallow Aquifer Denitrification

Nitrate contamination of water resources has been recognized as a widespread problem largely attributable to agricultural practices. Research focused on the resolution of this issue was conducted at the Elk Valley aquifer in northeastern North Dakota, an important source of irrigation and drinking water for farms and rural communities in the area. Nitrate was found to be present in the upper three meters of the aquifer. Naturally occurring denitrification in the aquifer was found to be responsible for the decreasing concentration of nitrate with depth, confirming the existence and function of a natural mechanism for remediation of nitrate contamination due to agricultural nitrogen inputs. We now know where the nitrate is, how much there is, how it got there, how and why it is behaving in this manner, and how it moves, all of which provide the foundation for prevention and management of the problem.

Understanding nitrate distribution in an aquifer and the processes affecting nitrate occurrence can result in pollution prevention practices for water-well systems, as well as design and operation of wells to minimize the withdrawal of contaminated water. Excessive nitrate concentrations in groundwater can be an indicator to unnecessary and excessively costly applications of fertilizer, practical knowledge of which may provide for cost-effective reductions in application rates. Because nitrate is found in a distinct horizon of the aquifer, it may be possible to intentionally withdraw and use nitrate-rich water for irrigation, reducing the costs of applying additional fertilizer. These findings have generic applicability to other regions of the country with

similarities in climate, geology, hydrology, and agricultural practices. Thus understanding from one carefully designed and executed experiment has management implications for glacial aquifers in North Dakota, Montana, South Dakota, Minnesota, Wisconsin, Michigan, New York, New Hampshire, Vermont, Massachusetts, and Maine.

### Effects of Irrigation Pumping Practices on Groundwater Quality

Irrigation is often cited as a factor in the degradation of water quality because increased movement of water through the landscape creates opportunities for movement of fertilizers and pesticides downward to the water table. Existing agronomic and hydrologic research has emphasized root zone and surficial water at the expense of the key groundwater component. For example, nitrate contaminant plumes have been observed downgradient from irrigation wells across the country, but an objective explanation has been virtually nonexistent. The EERC research focused on determining the effect of irrigation pumping on groundwater flow and quality in a glacial aquifer. The research was based on water quality determinations in the vicinity of a typical irrigation well. Aquifer behavior during pumping was simulated with field-validated computer modeling to provide a three-dimensional understanding of groundwater flow and chemical movement in response to actual irrigation of a potato crop.

Results demonstrated that cyclic irrigation pumping can alter groundwater flow patterns and redistribute nitrate and other chemical contaminants vertically to the total depth of the aquifer because of hydraulic stresses induced during pumping. This occurs because mixing of water from all levels of the aquifer occurs in the vicinity of the well. When pumping stops, the mixed water can then move downgradient in plumes of contaminated groundwater. This chain of events can move nitrate and other chemical contaminants into deeper regions of the aquifer. Deep, long-term nitrate contamination may result in deeper portions of the aquifer where naturally occurring denitrification cannot occur.

These results have widespread implications because current management practices do not address the effect of irrigation system operations on groundwater flow and contaminant movement. Where intensive irrigation of farmland occurs, as in Nebraska, Kansas, Oklahoma, Texas (High Plains Ogallala aquifer), and North Dakota, present pumping practices may be responsible for nitrate and other chemical contamination deep in the aquifers. Surveys for agricultural chemical contamination of groundwater commonly utilize high-capacity wells, such as municipal and irrigation wells in their sampling strategy. Results of this study indicate that these wells may provide misleading data in that measured nitrate concentrations do not truly reflect aquifer conditions. However, this new understanding of aquifer behavior in response to irrigation pumping can lead to tailored pumping practices which eliminate or minimize adverse effects of cyclic pumping, while still reaping the benefits of irrigation. Individual farmers and agencies, including the North Dakota State Water Commission and the U.S. Geological Survey, have shown particular interest in the results of this research program because of their integrated relationships and needs in identifying, utilizing, and regulating the use of our groundwater resources.

### Groundwater Recharge Through Soil Fractures

Groundwater typically occurs within several hundred feet beneath land surface, making it particularly vulnerable to contamination that can move downward through pores, channels, and fracture in the earth matrix. A critical component of this research program is to determine the pathways by which agricultural chemicals are transported from land surface to shallow groundwater aquifers. The vulnerability of groundwater to contamination is increased where rapid infiltration of water occurs and a shallow water table exists. Classical agronomic and hydrologic research typically focuses on sites with coarser-grained soils and sediments. However, many of our productive agricultural areas occur in relatively fine-grained earth materials that have been assumed to have very low recharge capability. The EERC research was focused on understanding recharge at several field sites with glacially derived fine-grained soils and sediments. At one field site, several pesticides have been consistently detected in groundwater samples. Results also indicate that groundwater recharge is primarily depression-focused, with micro- and macrofractures providing the preferential rapid pathway for contaminant transport to the water table.

These results are significant because they show the relative ease with which shallow aquifers located below fine-grained sediments can be contaminated by the transport of agricultural chemicals along preferential flow pathways such as fractures. Because fractures are a common structure of glacial tills and glacial aquifers are a major source of drinking water in North Dakota, Minnesota, South Dakota, Nebraska, Iowa, Michigan, Wisconsin, Ohio, Pennsylvania, New York, Vermont, and Maine, it is important that we understand this transport mechanism. Where recharge is depression-focused, mapping of areas vulnerable to groundwater contamination may be possible, and management practices could be developed to minimize the potential for chemical contamination of groundwater.



## COOPERATIVE PROGRAM SUPPORT

This research program has generated so much interest and demand for results that 24 presentations and/or publications have already been provided to various user groups, which reflects a widespread need for the products of this program. Farmers are supporting the program by providing private field sites at no cost. Irrigation groups, water-user boards, and agencies responsible for development and protection of water resources closely follow the research because it is important to them. The North Dakota State Water Commission has requested and received all data generated. Results from this research have been used to guide the ND Pesticide/Groundwater Technical Committee initiatives. The EERC has initiated an agricultural chemical groundwater investigation funded by the Devils Lake Sioux Tribe focused on agricultural chemicals in the tribal water supply, which is located in irrigated farmland. The EERC and AGVISE Laboratories, a private research group which conducts pesticide registration and chemical testing for several chemical producers, are collaborating on an industry-sponsored initiative to understand ecosystem impacts of agricultural chemical usage. The program has resulted in a broad network of cooperating, supporting, and generally interested individuals and agencies including:

Dr. Maurice Horton, USDA, Washington  
 Margaret Townsend, Hydrogeologist, Kansas Geological Survey  
 Roy Spalding, Water Center, University of Nebraska-Lincoln  
 Dr. John Cherry, Hydrogeologist, University of Waterloo  
 Jerry Ayers, Research Hydrogeologist, University of Nebraska-Lincoln  
 Dr. David Gosselin, Research Hydrogeologist, Nebraska Geological Survey  
 Blyth Hoyle, Department of Civil Engineering, University of California-Davis  
 Dr. Edward Lloyd, AGVISE, Inc.  
 Russell Brown, AGSCO, Inc.  
 Devils Lake Sioux Tribe  
 Katherine Ellins, University of Florida  
 Nelson Shaffer, Research Geologist, Indiana Geological Survey  
 Dr. Robert Hordon, Water Resources, Rutgers University  
 Sarah Vogel, North Dakota Commissioner of Agriculture  
 Jon Patch, Hydrologist, ND State Water Commission  
 Dr. William Woessner, Hydrogeologist, University of Montana  
 William Schuh, Hydrologist/Soil Scientist, ND State Water Commission  
 Kenneth Junkert, Groundwater Program Director, ND Department of Agriculture  
 Herb Mittelstedt, ND Water Quality Coordinator, USDA SCS  
 John Gallagher, Grand Forks North Dakota Water Resource District  
 William Horak, District Chief, Water Resources Division, U.S. Geological Survey  
 Dr. Bruce Seelig, ND Extension Water Quality Specialist  
 Jeff Stoner, U.S. Geological Survey, St. Paul, MN  
 Wayne Burbank, Irrigation Advisor, Garrison Diversion Conservancy District  
 Dr. Carl Fanning, Extension Soil Specialist, ND  
 Ed Murphy, Environmental Geologist, ND Geological Survey

## FUTURE RESEARCH PROGRAM DIRECTION

A long-term goal of this program is to expand the current broadly based and growing program through industry-sponsored cooperative projects. Nitrate and pesticide contamination of groundwater are growing issues that agriculture must understand and manage in a wide variety of settings including wetlands, a politically sensitive topic that desperately needs comprehensive hydrogeologic perspective. The EERC is committed to providing continued practical understanding of the occurrence, transport, and fate of agricultural chemicals in farm, ranch, and wetlands environments. The overall strength of the EERC research program lies in understanding climate-geology-water-chemical interactions and ultimately applying that understanding in the field.

## NORTHWESTERN UNIVERSITY

## STATEMENT OF ARNOLD R. WEBER, PRESIDENT

Senator Bumpers and other distinguished Members of the Subcommittee, I am taking this opportunity to submit to you written testimony to be inserted in the official record on behalf of Northwestern University and its Biotechnology Center. I am seeking further support of our proposal that the federal government should provide \$12 million in a partnership grant, as partial funding of a \$24.4 million facilities project for Northwestern University's Biotechnology Center. In FY1991, through a federal grant of \$50,000 from your committee, this proposal was submitted to and approved by a feasibility study of the United States Department of Agriculture (USDA) Cooperative State Research Service. In FY1992 and FY1993 respectively, federal grants of \$582,000 and \$501,490 for initial construction were of great importance in advancing this project. Let me take this opportunity to express my gratitude for your past support, to outline the progress that has resulted at the Biotechnology Center, and to urge that you complete the federal portion of the project costs during the fiscal years 1994 and 1995.

Northwestern's Biotechnology Center project has two components, designed to create state-of-the-art facilities for biotechnology research, training, and technology transfer. A new \$18 million life science research building is being constructed for biotechnology scientists in the two Departments of Biochemistry, Molecular Biology, and Cell Biology and of Neurobiology and Physiology. A \$5.8 million renovation of laboratories and related research space in the Technological Institute Building will be made available to biotechnology scientists in the three Departments of Chemistry, Chemical Engineering, and Biomedical Engineering. A utilities tunnel for these two facilities, costing \$600,000, brings the project total to \$24.4 million. Because of our pressing need for research laboratories, officials of the Cooperative State Research Service have agreed to, and we have proceeded with, construction of the new space through a combination of privately raised funding and debt financing.

The mission of Northwestern's Biotechnology Center is to increase research support and integrate multidisciplinary research programs, to provide an educational focus for the training of biotechnology scientists and administrators, and to enhance industry interaction and technology transfer. When I spoke previously before this Subcommittee, I gave a detailed history of Northwestern's industry linkages, graduate programs, and faculty research in the area of biotechnology, including a significant record of individual and institutional awards for external support from corporate as well as government sources. Today, I want to offer some specific examples of recent progress at Northwestern in the areas of biotechnology research, education, and technology transfer. These new scientific breakthroughs, training programs, and industrial collaborations at Northwestern represent the significant potential of the Biotechnology Center to increase competitiveness and to create jobs in the nation's agriculture and agriculture-related industries.

Animal Development and Genetics. In the past, impressive improvements in the quality of the nation's livestock were achieved through careful breeding programs. However, biotechnology now offers a faster, more direct method to achieve additional progress. Through biotechnology, new or altered genes may be introduced into an animal, leading to the increased production of some vital genetic component: a hormone that controls the rate of animal growth; an enzyme that allows animals to utilize plentiful or inexpensive feed; or a protein to fight infection from a virus. To enhance the possibilities that biotechnology offers, these genes

must be delivered into animals efficiently and become "active" in the appropriate tissues and organs.

During the past year, there have been notable advances in this area. For example, Professor Kelly Mayo has achieved the first cloning of the receptor for the growth hormone-releasing hormone -- a critical regulator of animal growth, which is also of interest for human health. In addition, Professor Richard Morimoto has discovered a family of transcription factors that regulate stress responsive changes in gene expression within various organisms, ranging in complexity from microscopic bacteria to large mammals. Professor Doug Engel has discovered a second family of transcription factors controlling the genetic program activated during blood cell differentiation. The identification of these two families of factors provides the molecular tools to enhance or repress the expression of desirable or undesirable traits in agriculturally important organisms.

**Drugs, Vaccines, and Disease and Pest Control.** Prevention and control of disease in animals is a prominent subject of research for Northwestern University immunologists and virologists. Infectious agents such as bacteria and viruses can cause severe agricultural and economic damage. For instance, the 1983 outbreak of chicken influenza virus in Pennsylvania caused the death (or destruction to stop the spread of the disease) of tens of millions of chickens. More recently, the spread of bovine spongiform encephalopathy (mad cow disease) in Great Britain provided another example of how an unanticipated disease can cause a major disruption in a nation's food supply and economy. Infection by influenza virus is particularly difficult to prevent because of the speed with which the virus can change to escape an animal's immune system. The key to stopping a virus is identifying its vulnerabilities. For example, there is a small viral protein that is absolutely essential for virus infection and that cannot change as rapidly as the other parts of the virus.

A recent scientific collaboration between the Northwestern laboratories of Professors Robert Lamb and Lawrence Pinto may have identified the "Achilles Heel" of this influenza virus. These investigators have found a small viral protein that punches holes in the surface of cells, allowing charged atoms to move into and out of the cells. This discovery explains, for the first time, how the influenza class of viruses is able to release genetic information after entry into a cell and how newly produced viruses in the infected cell are able to assemble from their component parts. This finding also explains how the anti-viral drug amantadine works, and will enable the rational design of new and more effective anti-influenza virus pharmaceuticals.

**Plant Productivity.** Because plant growth is limited by available nutrients in the ground, large amounts of fertilizers are utilized in agriculture. One of the most important nutrients in these fertilizers is potassium since low potassium levels in the soil severely retard plant growth. As an alternative to adding expensive fertilizers to crops, biotechnology offers the possibility of creating new strains of agriculturally important plants (such as corn) that can grow in the presence of smaller amounts of potassium. To achieve this goal, plants must be engineered to extract potassium more efficiently from the soil.

Professor Richard Gaber and his colleagues at Northwestern were the first to isolate the gene responsible for bringing potassium into plant cells, and have recently discovered how this potassium channel operates. This gene can now be redesigned in the laboratory so that it is much more active, and then reintroduced into plants. Such an "over-active" gene would lead to the production of more of this potassium-uptake protein in the plant,

enabling the plant to retrieve potassium more efficiently from the soil. It is also possible to restrict the area of the plant in which this modified gene is active. This technique could allow more potassium transport only into the roots, which distribute this nutrient to the rest of the plant. In the other parts of the plant, the potassium would be transported to the inside of the individual cells at normal rather than excessive levels.

**Training Programs.** In the fall of 1992, the first class enrolled in the new Master's Program in Biotechnology. This program offers an interdisciplinary approach to the study of biotechnology, including science courses, business courses, laboratory research at Northwestern, and industrial internships. The students applying to this program are highly qualified bachelors in science or engineering. The graduates from this program will be uniquely qualified to meet the nation's growing need for trained scientists in the biotechnology industries. In the spring of 1992, the National Institutes of Health (NIH) conducted a favorable site visit regarding a proposal, currently pending, for support in the creation of a new Ph.D. Program in Biotechnology. Novel aspects of this program will include: an interdisciplinary core of course requirements, plus specialization in one department; close collaboration of faculty and students from many disciplines; exposure to research laboratories in several disciplines through short-term residences; multi-disciplinary doctoral thesis committees; attendance at regular biotechnology seminars and other interdisciplinary research group meetings; and systematic exposure to industrial biotechnology through research internships. Graduates will be more effectively prepared to fill the growing number of research positions at biotechnology companies, as well as university and government laboratories.

**Technology Transfer.** In addition to the Master's and Ph.D. programs, the Biotechnology Center engages in numerous other forms of technology transfer, notably in the two areas of food/agriculture and biomass/bioremediation. For example, in the fall of 1992, the Center hosted a one-day seminar on recent trends in biotechnology, targeted to corporate managers of companies in the food/agriculture or environmental protection fields. In the summer of 1992, the Center organized and chaired a national symposium on "pharming" (i.e., the use of genetically engineered livestock and plants to produce high-value products) for the Society for Industrial Microbiology. In January of 1993, the Center was selected and funded by the Midwest Plant Biotechnology Consortium to organize Chicago-area university, industry, and government resources in order to solve important regional and national problems in bioremediation and waste conversion. This project will involve first the identification and profiling of academic, corporate, and governmental researchers with relevant expertise and organizations with vested interest in this area. Then the project will establish a seminar series to engage those identified in a dialogue that will select the problems most important to be targeted and the solutions most likely to be productive.

In conclusion, I would like to thank you and your Subcommittee for the construction funding to date of just over \$1 million. Our original request in 1990 was for \$12 million in federal partnership funding. Northwestern has already raised almost all of its \$12.4 million share from private funds and has made good progress in construction. Senator Bumpers, knowing your difficult budgetary constraints this year, I nevertheless request that the remaining federal portion be granted in FY1994 and FY1995 so that the progress of Northwestern's Biotechnology Center, such as I have outlined today, can continue. Unless the federal funding is significantly accelerated, there will be further cost increases for the project, and there will be further delays in completion of the

much needed state-of-the-art laboratories for Northwestern's Biotechnology Center. If that happens, top-rated faculty may leave or refuse to come when recruited, seriously compromising the continuation and expansion of the Biotechnology Center's high quality research, training, and technology transfer. Therefore, I specifically request that approximately \$5.45 million be made available in FY1994. Thank you, Senator Bumpers.



## OKLAHOMA STATE UNIVERSITY

## STATEMENT OF DR. JOHN R. CAMPBELL, PRESIDENT

Mr. Chairman and Members of the Subcommittee:

Thank you for providing me the opportunity to present this statement to your subcommittee.

Oklahoma State University (OSU) first wishes to state its strong support of the agricultural budget recommendations of the National Association of State Universities and Land-Grant Colleges (NASULGC). Officials of OSU and other NASULGC institutions work closely with USDA in developing appropriation recommendations which are both reasonable and consistent with overall national program needs. We request the committee's support of these recommended funding levels for fiscal 1994.

Oklahoma State University seeks congressional support of funding for the following initiatives of primary importance to the State of Oklahoma:

- Great Plains Policy Analysis Project, KS and OK -- \$600,000
- Increasing Profitability of the Wheat/Stocker Cattle Enterprise, OK -- \$400,000
- Integrated Production Practices for Horticultural Crops, OK -- \$200,000
- OSU Beef Cattle Environmental Stress Research Facility -- \$750,000
- Preservation and Processing Research of Selected Fruits and Vegetables, OK -- \$267,000
- OSU Grain and Stored Product Research/Teaching/Extension Center -- \$400,000

Further information on each request follows.

**GREAT PLAINS POLICY ANALYSIS PROJECT, KS AND OK**

(Formerly known as "The Great Plains Agricultural Policy Center, KS and OK")

Oklahoma State University requests \$600,000 for continuation of the Great Plains Policy Analysis Project, KS and OK, (GPPAP) in fiscal 1994. A combined effort of the ten Great Plains states, GPPAP is led by Oklahoma State University and Kansas State University. The research program is dedicated to research and technology transfer with active participation of scientists from the 10 Great Plains states and other states as appropriate.

The purpose of the project is to identify and measure the impacts of Federal agricultural and natural resource policies on the Great Plains region. Several key issues with important implications to the Great Plains will be the focus of project efforts. Such issues include: 1) The impact on agricultural firms, industries and sectors of the Great Plains as a result of a North American Free Trade Agreement; 2) The implications for the Great Plains region of post-Conservation Reserve Land-use policies; and 3) The implications for Great Plains agricultural producers of environmental policies including planting flexibility, conservation compliance, wetlands and water quality legislation.

**INCREASING PROFITABILITY OF THE WHEAT/STOCKER CATTLE ENTERPRISE, OK**  
(Formerly known as "Expanded Wheat Pasture, OK")

OSU requests \$400,000 for the continuation of this research project in fiscal 1994. Project objectives are: 1) increase profitability of the wheat grain/stocker-feeder cattle enterprise; 2) decrease production risks and income variability from the enterprise and thereby increase growth of the industry in the southern Great Plains; and 3) improve the economies of many rural communities in Oklahoma and the southern Great Plains. The objectives of this project are being accomplished by improving agronomic practices for growing more wheat forage, developing strategic supplementation strategies for wheat pasture stocker cattle, and developing

decision-support microcomputer models. Preliminary information is already being adopted by growers, with positive results.

#### **INTEGRATED PRODUCTION PRACTICES FOR HORTICULTURAL CROPS, OK (Formerly known as "Integrated Production Systems, OK")**

OSU requests \$200,000 for continuation of this research project in fiscal 1994. The project is designed to develop production systems for horticultural crops by incorporating information obtained through the joint research efforts of soil scientists, horticulturists, entomologists, plant pathologists, and agricultural economists into integrated crop management systems for growers. The production systems are being designed for small or large, independent or contract, growers, and are beginning to stimulate great interest in the region by processors. Systems are being developed for watermelons, cucumbers, sweet corn and blackberries.

#### **OSU BEEF CATTLE ENVIRONMENTAL STRESS RESEARCH FACILITY**

Oklahoma State University requests \$750,000 through the USDA/CSRS Buildings and Facilities program for construction of the Beef Cattle Environmental Stress Research Facility at OSU. The beef cattle industry of the state and its allied industries are committed to providing matching funds to allow the construction of the proposed \$1,500,000 facility. The project has been endorsed by the Oklahoma Cattlemen's Association.

USDA/CSRS has initiated a planning study for the facility, a site inspection is scheduled for early May, and a favorable study report is expected to be completed by mid-1993. Designs for the facility are partially completed.

Present facilities badly need renovation and are located great distances from OSU, making daily observation and measurements impossible. Furthermore, available facilities do not meet the design and equipment standards now demanded for research results to be acceptable to FDA and other federal agencies. Many studies on treatments for stress abatement and management have had to be curtailed because of these deficiencies.

The proposed facility will allow state-of-the-art research on the management of environmental and nutritional stress. Because much of the stress is the result of transporting animals for long distances in inclement weather (e.g., "shipping fever"), the planned facility allows for use of six truckloads at a time with a truckload being the experimental unit.

#### **PRESERVATION AND PROCESSING RESEARCH OF SELECTED FRUITS AND VEGETABLES, OK**

The continuation of funding for preservation and processing research at OSU is requested at a level of \$267,000 in fiscal 1994. Preservation of quality after harvest is of critical importance for fresh fruits and vegetables. The overall objective of the research is to define the major limitations for maintaining quality of harvested fruits and vegetables, especially for Oklahoma-grown produce, and then prescribe appropriate harvesting and handling protocols (or refinement in handling) to extend shelf life.

Projects to establish proper variety selection for improved harvest and post-harvest handling characteristics, to devise new instruments and procedures for assessing and maintaining post-harvest quality, and to evaluate processing potential for fruits and vegetables are underway. Electronics development for a new instrument for assessing fresh market quality of produce has been completed, and a prototype device has been tested for nondestructive assignment of

optimum harvest maturity for watermelons, and for detecting edible quality/storage potential for peaches. Refinements in instrument design for detecting market quality/potential for various fruits and vegetables are being tested for potential commercial adaptation and utilization. An Oklahoma-based manufacturer for this product has been identified, and matching funding to accommodate technology transfer have been received from a state agency. Potential commercial products may be available as early as 1995 or 1996.

Variety recommendations for improved post-harvest handling characteristics, suggestions for improved fruit and vegetable handling and storage, and evaluation of new instrumentation for on-line nondestructive assignment of quality for harvested products can be completed as early as fiscal year 1998. Harvest quality evaluations for small fruit varieties were completed during the 1992 growing season, with recommendations to be made in 1993. Watermelon and cantaloupe harvest quality evaluations were initiated in 1992 to expand integrated production efforts, and will be continued through the 1994 growing season.

#### **OSU GRAIN AND STORED PRODUCT RESEARCH/TEACHING/EXTENSION CENTER**

An appropriation of \$400,000 through the CSRS Buildings and Facilities program is requested for the OSU Grain Storage Research/Teaching/Extension Center. Oklahoma State University has emerged as a national leader in stored grain management during the past 10 years through the work of a critical mass of researchers and specialists. The proposed facility will include field scale and laboratory grain storage bins for research and education on high risk grain storage problems, grain and bulk product processing and value added opportunities in Oklahoma and the region. Technologies designed to minimize pesticide use, develop processing techniques for livestock feed and human food products, and to provide assistance to grain export marketing efforts will be developed.

Oklahoma loses an estimated 10-12% (\$40-60 million) of stored grain annually. Strong support for a stored grain research center is documented by the Oklahoma commercial wheat industry's commissions and associations. Support is needed to assist the commercial grain industry, value-added grain products manufacturers, and livestock industry production efficiency and profitability. Storage and processing technology has lagged behind field production technologies for decades. Development of the proposed grain storage and processing center will exhibit strong support for this vital part of Oklahoma's economy by facilitating improved quality and reducing costs, improving Oklahoma's competitiveness in domestic and world markets.

#### **CLOSING**

Support of these projects, both new and ongoing, will help ensure the availability of state-of-the-art agricultural research, information and education programs for the continued economic development of Oklahoma, the region and the nation. Your support of these programs is respectfully requested, and the opportunity to submit this testimony is greatly appreciated.

## STATEMENT OF CRYSTAL H. PACLEG

### Opening Statement:

Having been an applicant for federally subsidized single family housing in New Jersey under the Department of Agriculture's FmHA program with subsequent attempts to secure loans for a selected home, I formally ask that legislative attention be brought to the procedures and implementation thereof by that agency.

FmHA, though understaffed and suffering from diminished funding is one of the few opportunities for lower income families to obtain a home and better their chances for a more productive life. There should be no suggestion of hurting or taking away this essential government assistance. But both through numerous horror stories told by other applicants and home owners involved with the program, as well as the extreme difficulties experienced with my own case from April 1991 through November 1992, it is fundamentally apparent that FmHA is pervaded with inadequate policies and riddled with human error and bureaucratic apathy.

With the beginning of the new administration it should be of the utmost concern that in its present form the FmHA allows for financial and emotional detriment to the very same applicants that it is intending to help. That most especially in this environment of economic concerns, it is an allegory for waste on all sides of the issue: a worthy program, hampered by lessened funding, thwarting itself by not having the insight or foresight to change.

### INSUFFICIENCIES :

The following concerns are categorized under Procedure, Education, and Human Relations and pertain to an applicant's initial contact through closure on both the local and federal level.

Stemming from personal experience and supporting documentation, they are summarized for purposes of this testimony in generalized form

#### Procedure

The FmHA eligibility application is arduous and almost infeasible to properly fill out with questions often requiring future speculation on costs of a home not yet chosen. It is my understanding that Congressman Dick Durbin, chairman of the House Appropriations Committee and Subcommittee on Agriculture and Rural Development has recently addressed this issue for review.

#### Procedures are non-sequential .

- Though a FmHA appraisal is performed and necessary repairs outlined after a home is chosen, there appears to be no time limit when and if a FmHA inspection is made.
- Unknown to the applicant the level of county, district and state involvement is determined exclusively by the amount of the loan. A county's decisions and requests for repairs can later be added on to by higher authority well at the end of the process, leaving the applicant and seller in difficult positioning.

- As will be discussed below ,no guidelines are given to the applicant before he or she begins looking for a home,creating a high possibility of wasted time and heartache when an applicant's selection is found months later to be deemed disqualified .
- Procedure is not always followed by FmHA employees secondarily as an effort to help "move" the process along by circumventing the inconsistent policies. This assistance usually comes in the form of verbal assurances or instruction. Lack of following through on procedure seems to be also apparent in some circumstances because of understaffing. Both examples are dangerous to the applicant as the file moves up the ladder and errors found late in the process causing misinformation and possible jeopardy of the loan.

The appeals procedure is limited to FmHA's self description of what is "directly and adversely" affecting (FmHA 1900.52) the applicant. According to FmHA definition , loss of assistance is appealable, disqualification of a home no matter that months and money and have been expended is not. Presumably the applicant is able to simply find another home, now wiser for the experience. To give up on the program or spend much time and effort convincing the state level to allow a new review or list of specific deficiencies, are the more realistic scenarios.

## Education

Applicants are not fully informed or given outlines on the stages, length, terms, and definitions of, and distinction between FmHA eligibility and the home qualification process.

- Subsidy recapture is outlined in only general not specific terms for the applicant's situation
- Limits and requirements for housing qualification , income eligibility and miscellaneous costs are not provided in detail but with incomplete enumerations. For example, other than the home needing to be modest in size and limited to certain number of rooms no reference is made to the stringent FmHA codes for qualification or that an applicant's eligibility can be reviewed every 3 months, even after the loan process is near completion
- Applicants, most of whom are novice home buyers , are not provided with information on what to look for in a home , how to price a home or who pays commission.

Documentation from FmHA employees both on local and federal levels seem not to be checked for factual accuracy and in some cases information to the applicant is given with more opinion or in a dismissive attitude than with researched fact. For example cost for repairs erroneously given an inflated estimate in the state level is repetitively used in federal communications to the applicant, even though actual bid quotes are documented and provided to all levels.

## Human Relations:

On all levels FmHA officials seem to be accessible, however concern for the status quo has extreme precedence over concern for the applicant. Apologies are



not easily made and the applicant is made to solely deal with the repercussions made from FmHA faulty procedure or staff error.

That the applicant, being low income, has little monetary and perhaps educational resources seems not to be of concern to FmHA employees or policy. If after months of waiting, a home is disqualified or eligibility withdrawn, the applicant is left without resources or support.

## CONCLUSION

Personally, FmHA offered me a dream-- a chance to have my own home, in a town where I could live a more relaxing life with my child. Through a series of inadequate procedure and employee error, my family, 2 years later, is still trying to pick up the pieces from the FmHA nightmare.

The innumerable errors made, began with my initial interview in June 1991. It culminated, though certainly not ended, with a county FmHA official giving me verbal permission to move into a home that was assumed qualified and one month after the move abruptly disqualified.

For my son and myself, it is too late. We are left in a more transitional personal life than what we were before we ever heard of FmHA. We've given up on the program because it gave up on us.

But for future applicants as well as those of us who have suffered I ask that courage be summoned within this new administration to create change in the FmHA and all other housing programs.

Maybe in the future, less families will end up with heartache and more with new homes.

I thank you for allowing me this opportunity to provide testimony and am at your service in the event further documentation is requested.

*Crystal H. Pacleb*

Crystal H. Pacleb  
PO Box 791  
Souderton, PA 18964

## STATEMENT OF THE PENNSYLVANIA LAMB MARKETING COOPERATIVE

We thank the Chair and members of the Sub-Committee for the opportunity to describe our lamb marketing cooperative and to express our support for the National Rural Cooperative Development Task Force efforts to stimulate new cooperative businesses.

The limitations of existing lamb market structures in Pennsylvania are threatening the continued existence of sheep farming in the state. Unpredictable livestock auction prices fluctuate widely through the year. More often than not prices yield returns far below the cost of production. Yet, since 1978, the retail price of lamb has tended to steadily increase. For the state's commercial sheep producers there is no alternative to the livestock auctions. Diversification of market opportunity and development of greater producer control over marketing is essential to the future growth and development of the industry.

We believe that a marketing cooperative capable of assembling, processing and distributing value-added lamb products to selected retail, restaurant and direct-to-consumer markets in Pennsylvania could ameliorate this situation. On behalf of our industry we are conducting a comprehensive business feasibility study of direct wholesale market opportunity within Pennsylvania and adjacent market areas. The study will identify market needs and target markets, assess producers ability to produce the desired product in the required quantity and form, and evaluate the financial viability of developing a statewide marketing cooperative to assemble, process and distribute lamb.

To undertake this project, we have put together a team of producers and staff from Penn State University, the PA Department of Agriculture, the USDA Agricultural Cooperative Service and the American Sheep Industry Association. The in-kind value of this expertise is estimated at \$75,000. The Pennsylvania Sheep/Lamb Marketing Program has allocated \$10,000 of producer equity to the effort and has obtained a Federal State Market Improvement Grant to complete the study.

Conducting this research is but a first step toward our goal of a lamb marketing cooperative. Our next steps are equally important and very demanding. While starting any new business is always difficult, starting a cooperative business is even more so. Effectively organizing and operating a multiple-owner business is a monumental project, requiring considerable training and a high level of communications expertise. Coordinating the production of many different farms to meet common market needs presents major farm management challenges—Not to mention complex logistical issues involved with the assembly and slaughter of lambs from farms all over the state. The situation is further complicated by the depressed state of the Pennsylvania lamb industry. The financial hardships of the last few years limit the capital resources available to start the cooperative.

Recognition of the potential benefits of the lamb marketing cooperative provide the enthusiasm, creativity and perseverance needed to overcome such difficulties. We also believe that being part of the National Rural Cooperative Task Force effort will make a critical difference in our ability to succeed. **Therefore we urge you to increase funding for this program from \$1 million to \$5.5 million in the FY '94 Agricultural Appropriations Bill.**

## PENNSYLVANIA STATE UNIVERSITY

STATEMENT OF DENNIS D. CALVIN, ASSOCIATE PROFESSOR  
OF ENTOMOLOGY

**Mission Statement** - The purpose of this project is to develop weather data acquisition systems and link them with state-of-the-art decision support tools (expert systems, simulation models, geographic information systems, database management systems, and remote sensing) to improve farm profits while reducing environmental impacts of agricultural practices. Specifically, this project will identify specifications for a weather data acquisition system. Several products can result from this project, both in terms of hardware (weather data acquisition and other instrumentation), and software (weather and other input databases, decision support tools, and models).

**Justification** - The unpredictable nature of weather continues to be a major limiting factor to profitable and environmentally sound crop production. Two major groups of crop production inputs, fertilizers and pesticides, tend to be used at rates higher than necessary because of weather uncertainty and farm labor limitations. This leads to insurance applications of crop production inputs to buffer the farmer from major crop yield and quality losses. These insurance applications often do not reduce the risk of crop yield and quality losses. In these situations, the farmer incurs additional costs to crop production and increases the likelihood of toxic substances leaching or running into valuable water resources. Improved weather data acquisition to enhance the decision making process provided by several agricultural decision support tools will help a farmer minimize fertilizer and pesticide inputs through more refined targeting of needs, timing of applications, and rates of material. This will result in reduced input costs and increased profits while minimizing negative impacts on the environment.

Faculty at The Pennsylvania State University have been working on a computer based Crop Evaluation and Decision Support System to assist farmers with crop production decisions (Figure 1). This system when completed will incorporate the power of expert systems, simulation models, database management systems, geographic information systems (GIS), and other decision support tools. The Crop Evaluation and

Decision Support System will use computer technologies to acquire weather information through remote sensors; store field specific and spatially referenced data; analyze, interpret, and provide management advice using the collected data; and provide graphical displays of spatially referenced data.

A database management system has been developed and is being used by approximately 490 farmers in Pennsylvania to maintain field specific records on production inputs, pest information, and other production data. Using the information provided by the system, farmers in the program saved roughly \$20/acre.

Expert systems have been developed to assist Pennsylvania farmers with crop production decisions for corn, alfalfa, and apples. In addition to expert systems, simulation models are available to predict timing of key events in the life cycle of several insect pests and the growth and development of corn and alfalfa. These models can be used to increase the efficiency of pest scouting, timing of control actions, and to determine the need for control.

Geographic information systems provide spatially referenced data for a number of variables; soil type and characteristics, geological strata, topography, soil erosion potential, and depth to ground water. Several of these variables are important when evaluating the potential environmental affect of pesticides and nutrients at a given site. Using this information along with historic data, simulation models, and expert systems decisions about pesticide and nutrient use will be more environmentally sound. When completed, the Crop Evaluation and Decision Support System will provide a wide array of important information for farmers.

Currently, we have good decision support tools to assist farmers with crop management decisions, but lack a good weather data acquisition system to acquire the types of weather information needed by the tools. Research is needed to determine the proper scale of weather information needed to drive these models and provide reliable decision support and to determine the accuracy and precision required of this weather data, so the proper instrumentation can be developed. Because profit margins per unit of crop produced are extremely low for most agricultural commodities, the cost of these systems or information provided by the systems must be kept affordable for farmers.

**Questions that will be Addressed During the Project:**

1. Which crop production management decisions can be improved by increased availability of weather data?
2. What computer based decision support tools are currently available to assist crop producers in making management decisions?
3. What weather data are needed to enable farmers to use these computer based decision support tools to improve crop management?
4. What type of weather sensors are needed to acquire the weather data?
5. What accuracy and reliability is required of the weather sensors?
6. At what geographical scale(s) (size of area) does the weather data need to be collected?
7. What will the final product look like?
8. What is the economic costs and benefits of the Crop Evaluation and Decision Support System?
9. How can the system be expanded into a state and national information network.

**Plan** - The project is divided into three phases. Phase one will include the development of a prototype design of the weather acquisition system and its linkage with the available decision support tools. Instrumentation requirements and spatial arrangement of sensors will be based on previous research, experience of the investigators with agricultural system input requirements, the farm manager's needs, and the input needs of decision making tools identified for use on the farm. The assessment of the decision making tool requirements includes both identifying the types of input variables and determining the sensitivity of the tools to weather inputs. In addition, the decision support tools will be structured to accept weather data inputs from the weather data acquisition systems. In Phase two, instrumentation will be developed and installed at a site per phase one specifications. The test site will be a large dairy farm (Murmac Farms) which grows agronomic crops to feed the livestock. Phase Three will be the evaluation of the system's performance. The value of improved weather data acquisition on the farm for use in decision making will be determined by a detailed cost/benefits analysis.

**Cost of Project** - \$900,000 for three years.



**Potential Benefits of Project** - As a result of this project, an estimated benefit to farmers of \$84 million is expected, based on reduced input use and increased yields of agronomic crops in Pennsylvania. The farmer participating in this study is expected to benefit by a 10% improvement in returns to crop production or \$13,500 annually. If expanded nationally, a benefit of at least \$4 billion would be expected, without considering the cost of the weather data acquisition system. In addition, reductions in pesticide and nutrient use will reduce the potential for environmental contamination.

Once the system has been developed and tested, it can be continually expanded and its power enhanced by adding decision support tools as they become available. Although developed for a field crop system, with minor changes the system could be adapted to other cropping systems. Information provided by the system would increase the effectiveness of Cooperative Extension educational programs and help private crop advisors provide high quality services to their customers. The effectiveness of Cooperative Extension (both at the county, state, and federal level) would be greatly increased by improved timeliness of weather and crop production information supplied to farmers and the agribusiness community. Examples of the type of information that could be better provided to farmers by Cooperative Extension with a state-of-the-art weather data acquisition system include:

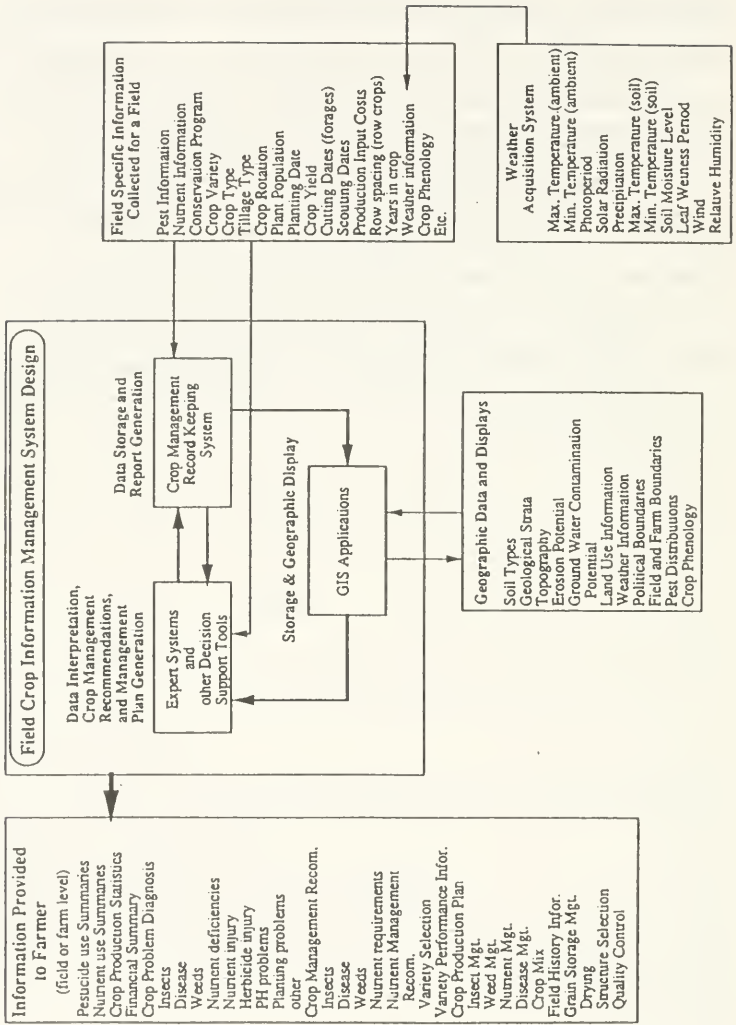
- weather forecasts and current conditions as they influence crop and farm management
- periods of insect and disease activity
- lists of control options and timing of control activities
- identification of optimal planting dates and nutrient levels
- the likelihood of water contamination by pesticides and herbicides applied on a given date
- optimal crop harvest periods
- likelihood of herbicide failures and losses of nutrients.

The Comprehensive nature of the Crop Evaluation and Decision Support System, also provides the Cooperative Extension Service with an organized presentation of state-of-the-art crop management knowledge that can be effectively used to teach farmers about the dynamic processes that influence decision making on the farm. As they understand the dynamic processes that influence crop production, farmers are better able

to make informed judgements about the utilization of production inputs, such as pesticides and nutrients. The outcome of this educational process, conducted through the Cooperative Extension System, would be improved profitability for the farmer and reduced risk of environmental contamination by crop production activities.

The Weather Data Acquisition System hardware and software could be developed and marketed by private companies, leading to new job opportunities. The comprehensive Crop Evaluation and Decision Support System could be used to encourage expansion of the Agricultural consulting industry, which would allow wider adoption of state-of-the-art technology to reduce over use of pesticides and nutrients that contaminate water resources.

Figure 1. Organizational Diagram of a Crop Information Management System for Field Crops



PHARMACEUTICAL MANUFACTURERS ASSOCIATION  
STATEMENT OF GERALD J. MOSSINGHOFF, PRESIDENT

Mr. Chairman and Members of the Subcommittee:

I am Gerald J. Mossinghoff, President of the Pharmaceutical Manufacturers Association. PMA represents more than 100 research-based pharmaceutical companies that discover, develop, and produce most of the prescription medicines used in the United States. I am pleased to submit this statement to the Subcommittee on our recommendations on the Fiscal Year 1994 budget for the Food and Drug Administration, as well as supplemental funding for Fiscal Year 1993.

As you know, last year the Congress enacted the Prescription Drug User Fee Act of 1992. This historic legislation was the result of close cooperation between the research-based pharmaceutical industry, the FDA, and the appropriate Congressional committees and their staff. The successful implementation of that legislation depends upon early action by Congress to approve the level of overall FDA appropriations that is required under that law. That Act mandates that user fees are to be additive to the FDA baseline level of appropriations for salaries and expenses for Fiscal Year 1992, indexed annually for inflation, and they must be applied solely to improving FDA's drug review and approval process.

As an essential first step, we urge that House and Senate action be completed as soon as possible on H.R. 2118, the Fiscal Year 1993 Supplemental Appropriations bill, which includes a provision to trigger the first \$36 million in fees in Fiscal Year 1993, as contemplated by the Act. We hope you agree that we must seize this opportunity to begin the process of speeding up the review of new human drug applications, in light of the major growth in research and development on new medicines -- an investment that can translate into direct benefits to the American people.

The pharmaceutical industry has doubled its R&D investment every five years since 1970. This year, the industry will invest an estimated \$12.6 billion in research and development -- a 13.5 percent increase over 1992, and amounting to 16.7 percent of sales this year.

This investment means new medicines. New medicines save lives and avoid or reduce the costs of hospital care, treatment, and nursing homes. Clear examples of major savings include a new drug for schizophrenia, drugs for treatment of certain types of heart disease, and effective anti-ulcer drugs. Moreover, pharmaceutical companies have a total of 328 medicines in testing for just eight currently uncured diseases -- osteoporosis, diabetes, stroke, depression, arthritis, Alzheimer's, cancer and cardiovascular diseases. The cost of these eight diseases amounts to over \$400 billion a year.

We understand that the FDA Council, an important public-interest coalition of patient and healthcare provider groups, has recommended that FDA receive \$842 million in appropriations in Fiscal Year 1994 -- an increase of about \$62 million over the current-year level. We fully support this recommendation. This should be augmented by the provision of an additional \$54 million in user fees pursuant to the Prescription Drug User Fee Act of 1992.

We recognize the need to hold the line on overall Federal spending, but we believe it is essential that the FDA budget be increased over the current-year level. An FDA budget freeze would result in a staffing cutback and would be completely contrary to the important policy objective of improving access to quality healthcare for the American people. A reduction in FDA staff resources would inevitably slow the process for bringing new and better medicines to the American people.

We are seriously concerned that the Fiscal Year 1994 budget request for FDA proposes only \$671 million in budget authority. This represents a reduction of \$109 million from the level of appropriations enacted for Fiscal Year 1993, and funding for salaries and expenses would be below the threshold required under the Prescription Drug User Fee Act of 1992 to implement the collection of prescription drug user fees in the next fiscal year.

Moreover, under this budget request there would be a decrease in full time equivalent staff (FTEs) in the Human Drugs program and in total FDA operations. The FTE level for New Drug Evaluation would remain unchanged at 724.

The Prescription Drug User Fee Act of 1992 stipulates that fees will be dedicated toward expediting the review of human drug applications, according to agreed-upon goals referenced in the statute. The Act requires that fees shall only be collected and available to defray increases in the costs of the resources allocated for this process, including the addition of staff for the review of human drug applications -- which is the essential method for improving this review process. The Act further provides that its provisions are not to be construed to mean that the number of FTE positions in other FDA operations are to be reduced to offset the staff increases for the review of human drug applications.

For these reasons, FDA will be statutorily prohibited from collecting prescription drug user fees during the next fiscal year unless restrictions on FDA's staff levels are waived. In its report accompanying H.R. 2118, the Fiscal Year 1993 Supplemental Appropriations bill, the House Committee on Appropriations "directs the Food and Drug Administration to hire at least 200 personnel in addition to their regular ceiling" to accelerate the human drug application review process. FDA staff have said that the Department of Health and Human Services plans to ask the Office of Management and Budget for a waiver to permit the hiring of additional FDA staff for this and certain other purposes.

There should be no delay in this action. We urge that the Senate Committee on Appropriations mandate in bill language the additional positions called for in the House Committee report.

Mr. Chairman, over the years the Senate Committee on Appropriations has provided vital support to FDA in spite of severe budget pressures, and it has opposed proposals for user fees that do not increase FDA resources. We strongly encourage the Committee to maintain these positions and to provide the increased appropriations and dedicated user fees that are required if FDA is to be able to fulfill its critically important mission.



## PIONEER HI-BRED INTERNATIONAL, INC.

## STATEMENT OF PETER A. FULLER, DIRECTOR, TECHNOLOGY ACQUISITION

I am writing to request continuing federal support for The Consortium for Plant Biotechnology Research (formerly The Midwest Plant Biotechnology Consortium). We are grateful for the Subcommittee's support (in the amount of \$2.8 million) last year, and hope funds can be found for an increase in Fiscal 1994. We ask you to support the Consortium's request for \$5 million in FY 1994 to provide for the continuation of projects started in 1993 and new starts in 1994.

The Consortium for Plant Biotechnology Research supports competitively selected projects for research and technology transfer in plant biotechnology, work that is critical to maintaining the strength and competitiveness of U.S. agriculture.

The United States is number one in the world in the quality of its university basic research. But, all too often, the results of this outstanding research do not get translated into solving society's problems. The Consortium for Plant Biotechnology Research is changing that by harnessing the research capabilities of world class universities to focus on solving agriculture problems with important industrial applications. The strong corporate involvement in the Consortium helps to keep the projects funded with this money in close touch with the search for practical solutions to our national agriculture problems. I feel focusing of scarce research dollars on university projects with identified applications makes a great deal of sense for U.S. agriculture and the taxpayers who are supporting this effort.

A unique strength of the Consortium is the highly competitive process it uses to select research projects. The selection process combines rigorous peer review with built-in technology transfer through industrial member involvement. The Consortium's thorough research project selection process insures that only the highest quality research with the most potential for practical applications to meet U.S. agriculture needs is funded. Thus, Consortium projects have achieved significant breakthroughs in such areas as improvement of grass species (corn, sorghum, rice and oats), nutritional enhancement of grains, control of crop pests, and production of high fructose corn syrup.

Pioneer Hi-Bred International, Inc. has derived several very valuable benefits from its association with and investment in the Consortium.

Participation in the Consortium will assist Pioneer Hi-Bred International, Inc. in bringing technologies to market through research which we could not accomplish on our own or would take much longer to complete without the assistance of these highly acclaimed research institutions.

At the administrative level, the Consortium has incorporated this year into a tax exempt, not for profit corporation, and changed its name to the Consortium for Plant Biotechnology Research, Inc. It is the same program, however, with the same mission and the same members.

Your continued support of this federal-university-industry Consortium is essential. Federal funding is critical to the health of this program. Pioneer Hi-Bred International, Inc. and most other companies, would not be able to compensate for any loss of federal support.

Please do not hesitate to call me if you would like additional information about this important program

PRAIRIE PUBLIC TELEVISION  
STATEMENT OF DENNIS FALK, PRESIDENT  
RURAL TECHNOLOGY GRANT PROGRAM

SYNOPSIS:

Prairie Public Broadcasting, Fargo, N D., supports continued funding of \$3 million in Fiscal Year 1994 for the Rural Technology Grant Program administered by the Rural Development Administration of the United States Department of Agriculture. The program was established as a five-year demonstration program in Fiscal Year 1990 to measure the effectiveness of utilizing public television stations to provide informational services relating to agriculture and other issues of importance to farmers and rural residents.

-----  
Mr. Chairman:

I am pleased to have the opportunity to express my support, on behalf of Prairie Public Television, for the Rural Technology Grant Program, and to request that \$3 million be appropriated in Fiscal Year 1994 for the fifth and final year of this unique demonstration program.

As you know, the Rural Technology Grant Program was authorized as part of the Food, Agriculture, Conservation and Trade Act of 1990. The program received its initial appropriation in Fiscal Year 1990.

The program has provided a cost-effective means to communicate with rural and farm residents through an already-established medium, public television. In North Dakota, for example, the Rural Technology Grant Program has focused on a variety of rural economic development issues in a live, state-wide interactive format; it has explored alternative economic resources and opportunities for rural areas, provided instructional and training programs for rural residents in economic transition, and broadcast an interactive series on business development.

In Vermont the program has dealt directly with the issues of contemporary farming by exploring the issues of land use, environmental impact, biotechnology, and price supports. In addition, programming has dealt with economic development and transition issues, including assisting small businesses train employees at all levels.

The Rural Technology Grant Program offers an opportunity to utilize the existing infrastructure and resources of public television to reach rural Americans. In remote areas where it might be necessary to drive hundreds of miles to attend seminars, training sessions, and have access to the ideas and tools of economic development and agricultural diversification, public television offers the means to access these from rural communities or even from individual homes. The success of the demonstration program holds great potential for rural areas throughout the United States, and I urge the Subcommittee to complete this program by providing \$3 million in Fiscal Year 1994.

## RED RIVER TRADE CORRIDOR, INC.

## STATEMENT OF JERRY NAGEL, DIRECTOR

**SYNOPSIS:**

The Red River Trade Corridor, Inc. is seeking \$400,000 to continue its research efforts to establish a prototype regional rural trade development strategy. The Trade Corridor requests a minimum appropriation of \$200,000 in Fiscal Year 1994 to support this model trade research program. The Corridor initiative was established in response to Congressional interest in emerging North American trade corridors and related federal infrastructure investment decisions. Funds provided in Fiscal Years 1992 and 1993 supported nine research projects, including studies on transportation, international agricultural trade strategies and prospects, and the region's agro-industrial research and development capabilities. Fiscal Year 1994 funding will support the continued analysis of trade opportunities in Mexico, begin an analysis of emerging trade opportunities throughout Latin America, and begin an analysis of the potential for transfer of technologies developed in the Red River Trade Corridor region to developing countries.

**BACKGROUND:**

The Red River Trade Corridor, Inc. involves the States of Minnesota and North Dakota, and the Canadian Province of Manitoba. The project's mission is to increase activity within the rural marketplace of the three jurisdictions and to promote internationally the region's central North American location. The Trade Corridor has received financial support from the states of Minnesota and North Dakota, the Canadian Province of Manitoba, the Canadian federal government through its Consulate General for the Midwest, private foundations, private corporations, and the US federal agencies.

The Corridor is founded on two important economic trends. First, the emergence of the "new economy" in which rural businesses will be networked with complementary businesses in their economic sectors and linked into the global business village. Second, the development of continental or multi-national trading blocs, such as the European Economic Community, Pacific Economic Cooperation Conference, and the emerging North American economic community. These trading blocs include sub-national, regional trading communities, and are actively building international trading relations with similar regional efforts around the globe. Through the research conducted with the support of the USDA, the Red River Trade Corridor is emerging as a rural based international regional community.

The Red River region of North Dakota, Minnesota and Manitoba was explored, developed and settled as a regional community. The three jurisdictions share a strong cultural and economic history. As a regional community, the Red River Trade Corridor has over 1.5 million people, 1988 taxable sales over \$17 billion, 20 post-secondary institutions, more than 50 public and private research and development facilities, three international airports, an extensive continental and arterial highway system, an extensive east/west and north/south railway system, and a well developed distribution infrastructure. The whole is greater than the sum of the parts, which is the inspiration of the Corridor project.

The Red River Trade Corridor project is a results oriented effort which provides a national model. Within a broad mission of economic expansion for the region, the project has three specific goals. They are to foster new hope, increase wealth, and expand choices for its rural residents. These are goals that drive our culture, brought explorers, settlers and entrepreneurs to the region, and shape our economic development policies. These goals will lead to the measurable results of production of jobs, increased income and raised productivity.

Design of the Red River Trade Corridor project came directly from input from business and community leaders in the three jurisdictions and research into global economic trends. The

project's overall strategies, management structure, and program foci are a result of this grassroots design process. The Red River Trade Corridor, Inc. is a not-for-profit corporation which serves as the management body for the project. It is governed by a Board of Directors of business and community leaders from the three jurisdictions.

The Red River Trade Corridor project has two components. One is a high visibility program of facilitating marketplace communications among the three jurisdictions. The second is a program of marketing the Red River Trade Corridor in North America and internationally. The results of these two project components will be increased trade among businesses in Minnesota, North Dakota and Manitoba; increased trade between Red River region businesses and North America; and new trading, technology transfer, educational and cultural linkages between the Red River Trade Corridor region and the global economy.

This regional effort requires that an economic picture of the region be developed; that regions be identified internationally for targeted trading relationships; and, that the research and development infrastructure of the Trade Corridor, especially those facilities involved in agricultural development, become an integral part of the Trade Corridor's efforts. If the region is to be successful internationally, it must first have the economic information and strategic opportunities identified. This approach provides a prototype for developing other trade corridors in rural areas.

The Red River Trade Corridor project, through the Agricultural Experiment Station at the University of Minnesota, received in fiscal years 1992 and 1993 a total of \$400,000 to do specific research that will help the Trade Corridor accomplish its rural development goals. The FY' 92 Phase I funds are supporting six research projects. They are:

- \* A study of transportation services and costs in the Red River Trade Corridor. This study will provide Trade Corridor businesses and economic developers with information regarding trucking, rail, and water transportation services and shipping rates for non-bulk commodities or manufactured goods from the three major cities in the region.

- \* An assessment of the Red River Trade Corridor's international trade position. This study will examine what are key marketplace sector strengths in the Red River Trade Corridor that could be further developed for international trade. Analysis will focus on agricultural specialty crops, food processing, and metal fabrication (which is currently is primarily agriculturally related). Additionally, the study will look at sector weaknesses in the region that could be strengthened through complementary development of sector strengths. The study will be used as a basis for preparing a long-term strategic economic development plan for the Trade Corridor and it will be used by local economic developers as they encourage specific sector development or growth in their communities.

- \* A study of the Agro-Industrial Research and Development capabilities within the Red River Trade Corridor region. The Trade Corridor recognizes that the future of successful economic development efforts in rural regions will be linked to their ability to ensure access to high quality R & D services for firms looking to expand or locate in a community. This study will provide information on R & D facilities, scientific capabilities, international trade and research skills, and current research specialties of the region. Additionally, through this study, discussions will be initiated among the scientific community of the entire Trade Corridor that are not currently taking place.

- \* An analysis of export opportunities that can be developed through collaboration with Manitoba producers, exporters and manufacturers. This study will provide information on Manitoba exports to non-U.S. locations; on U.S. imports into Manitoba from sources outside the Red River Trade Corridor; and, on the total exports out of the Red River Trade Corridor region of Minnesota, North Dakota and Manitoba. The study will provide an analysis of potential collaborative marketing strategies for the Red River Trade Corridor and of potential export opportunities for North Dakota and Minnesota businesses into Manitoba.



\* An analysis of the Red River Trade Corridor in the context of emerging North American trade corridors. The Trade Corridor recognizes that Congress has identified the need for further analysis of North American trade corridors to determine future infrastructure investment decisions. This study will provide a detailed analysis of trade flows in the Red River Trade Corridor with focus on products, mode of transportation and destination; an evaluation of the potential for further development of the Red River Trade Corridor; and, a comparative analysis between the Red River Trade Corridor and other North American trade corridors. The study will help the Trade Corridor position itself regarding U.S. strategies related to the emerging North American economic community.

\* A case study of agricultural development in Brittany, France. In 1960 Brittany, France was, as many rural regions in the U.S., a producer of agricultural products for export. It was dependent upon outside forces for product prices, markets, and economic security. A severe collapse of prices for many goods in 1960 set Brittany on a path of determining, as much as possible, its own economic future. Farmers, local authorities, chambers of commerce and industrial interests came together to establish a 20-year regional economic growth and structure plan. Today, Brittany has more than 500 firms in its agro-industrial sector and a growing high technology sector. What happened during this 20-year period? What roles did individual leaders and the various local groups play? What role did the Federal government play? When did Brittany decide to become internationally active on behalf of these companies? And, how did this international trade development strategy emerge? Answers to these questions will provide insight into how the Red River Trade Corridor could establish a long-term strategy for developing its agro-industrial sector and international trade potential.

The FY '93 Phase II funds are supporting three additional research projects and a national conference to discuss U.S./Canada agricultural collaboration opportunities. They new projects are:

\* A study of international trade strategies of selected regions in Western Europe and the implications for Red River Trade Corridor counter strategies. This study will provide Trade Corridor businesses and economic developers with an analysis of the economic characteristics, key marketplace sectors, activities in technology transfer and international trade strategies of selected western European regions. The study will provide specific information regarding economic development and international trade organizations in the case study regions, recommendations for specific regions to target for international trade activities, and recommendations regarding trade strategies toward the targeted regions.

\* An assessment of emerging trade opportunities in Mexico for the Red River Trade Corridor and the Trade Corridor's competitive position vis-a-vis those opportunities. This study will provide Trade Corridor businesses and economic developers with information regarding trade opportunities in key national and regional economic sectors in Mexico, an assessment of their competitive position relative to the targeted sectors, identification of organizations or agencies to help facilitate trade opportunities, and recommends strategies for pursuing trade with Mexico.

\* A study of bilateral technology transfer potential between businesses of the Red River Trade Corridor and Western European regions with a specific emphasis on food technologies and the role that respective technology centers can serve in facilitating technology transfers. This study will provide Trade Corridor businesses, technology centers and economic developers with an analysis of the trends and opportunities in technology transfer, particularly in food technologies, the role that the Red River Trade Corridor and western European technology centers can serve in facilitating the bilateral transfer and development of technologies, suggested strategies and available resources for pursuing technology transfer opportunities.

All of the studies prepared with CSRS funds will be printed and distributed to economic development organizations in the Trade Corridor. Additionally, their availability will be promoted in the Trade Corridor newsletter and the region's print and broadcast media, and the results and availability will be promoted, when appropriate, in national publications.



The Red River Trade Corridor is seeking \$400,000 to continue its research efforts to establish a prototype regional rural trade development strategy. The Trade Corridor requests a minimum appropriation of \$200,000 in Fiscal Year 1994 to continue its analysis of trade opportunities in Mexico, begin an analysis of emerging trade opportunities throughout Latin America, and begin an analysis of the potential for transfer of technologies developed in the trade Corridor region to developing countries.

The Mexico analysis will identify specific trade opportunities in Mexico both by region and by sector. The broader Latin American analysis will be used to identify emerging trade opportunities throughout Latin America. The technology transfer analysis will help identify potential trade in technology through joint ventures, direct sale or sale of goods for manufacturing. As with the research conducted in the first two phases, Phase III studies will be oriented toward determining realistic opportunities for economic development for businesses and rural communities in the region. It is the recognition that the economic future of rural regions is tied to their ability to participate in the global economy that is driving the subjects and practical direction of these projects. The results are designed to be useful and contribute to the economic development of the region. Additionally, the research results will be useful to rural economic development efforts throughout the Great Plains states.

The Red River Trade Corridor project is driven by its goals of fostering new hope, increasing wealth, and expanding choices. Through its programs of networking and marketing, the project will provide firms in the Red River region with information and opportunities to make choices about new markets, new technologies, work force enhancement, new partners, and global linkages. These choices provide the framework for actions that can lead to creation of jobs, increased income, and raised productivity. The sum will be economic expansion for the Red River region and a model for other rural corridor areas.

## STATE OF RHODE ISLAND

## STATEMENT OF HON. BRUCE SUNDLUN, GOVERNOR

Dear Mr. Chairman:

I am writing to provide testimony in support of a \$9.72 million facilities grant for the construction of the Main Campus Building of the Coastal Institute on Narragansett Bay at the University of Rhode Island.

On behalf of the citizens of Rhode Island, I thank you for your continued support and guidance in developing the Coastal Institute. We are pleased with the \$2.85 million Congress has already provided for the building program.

As Governor of the State of Rhode Island, I am keenly aware of the need to chart new directions and forge new alliances between the University, government, and the business community if we are to succeed in the 21st century. The Coastal Institute on Narragansett Bay will be a center for excellence in the management and utilization of coastal resources, both nationally and internationally. The Institute will produce the types of working alliances that address the many problems of coastal resource management.

The tax payers of Rhode Island have provided \$12.56 million toward the construction of facilities for the Coastal Institute. As Governor, I am strongly committed to this building program which is currently underway. The Coastal Institute On Narragansett Bay will be staffed and operated mainly by faculty from the University of Rhode Island's world class Graduate School of Oceanography and College of Resource Development.

The main campus building and aquaculture facility, which would be built under the first phase of construction, will create unique research capacity for both the state and nation, addressing such problems as the quality of our groundwater and the productivity of our bays, estuaries, and coastal lands. The building will house the nation's finest experimental economics laboratory. This laboratory will be dedicated to the type of research which can help the nation's international commodity traders as well as the framers of agricultural and environmental policy at all levels of government.

International marketers of U.S. agriculture and seafood products, and other industries, will work closely with the University to utilize this laboratory for testing and marketing their products. This laboratory will promote new alliances between industry, government, and the University.

The aquaculture facilities will provide research in the cultivation of new types of fish. The rest of the world currently dominates the markets for aquacultured salmon products which are strong competitors to our Alaska salmon ranching industry. The aquaculture facility will be built under the


requested facilities grant to provide the nation with environmentally sound aquaculture methods for other fish species. This will bring the United States into the forefront of fish cultivation.

The state of Rhode Island recognizes the unique contributions which the land grant university system makes to the nation. We are aware of how individual state universities make contributions in research and teaching which extend well beyond state boundaries. Our University is certainly exceptional in this regard. The Coastal Institute will guarantee continued success to the University and to the residents of Rhode Island.

The citizens of the smallest state in the nation, under the severest of economic stress, have demonstrated their support for the Coastal Institute on Narragansett Bay. I respectfully ask your committee to continue to work with us and provide the funds to complete the first phase of construction of the Institute.

Best personal wishes.

Sincerely,

A handwritten signature in cursive script, appearing to read "J. G. Hammond". The signature is written in dark ink and is positioned below the word "Sincerely,".

## UNIVERSITY OF RHODE ISLAND

## STATEMENT OF ROBERT L. CAROTHERS, PRESIDENT

Dear Mr. Chairman:

I am writing to offer testimony in support of a facilities grant of \$9.72 million to provide the remaining funding necessary to complete the first phase construction of the Main Campus Building and aquaculture facilities for the Coastal Institute on Narragansett Bay, at the University of Rhode Island.

On behalf of the administration of the University of Rhode Island, I thank you for your help and guidance. We appreciate the \$2.85 million which the Congress has already provided to support the building program.

The mission of the Coastal Institute will be to increase our understanding of the relationships between human activities and the condition of the coastal environment and its resources. The scientists of the Institute will work in partnership with local, state, federal, and international agencies to use this understanding to contribute to the solution of the increasingly pressing and complex problems of the coastal environment and development throughout the world.

The coastal regions that will be the focus of the Institute are broadly defined to include estuaries, bays, lagoons, beaches and wetlands of the coast and the entire watersheds of rivers that discharge directly into the sea.

The resources and human activities that are contained within this area are enormous: great urban industrial complexes, major transportation hubs, and over 50% of the world's population, along with some of our most productive agricultural lands. Most of the marine and freshwater aquaculture industries are also found within this coastal zone.

The program of the Coastal Institute will approach these resources and human activities at a systems level. By working beyond and across the bounds of traditional disciplines, the Coastal Institute will strive to understand social and natural systems not only in their parts, but in how they interact with each other. I believe that this is the approach that we must take if we are to find the means to improve the quality of our lives while still maintaining the natural productivity of the nation's and earth's resources.

The University of Rhode Island is in a unique position to play a national role in research and teaching in matters related to coastal environments. We have one of the very finest graduate schools of oceanography in the nation, considering both private and public universities. Scientists in our College of Resource Development, formerly the College of Agriculture, have over twenty years of experience in research related to agricultural practices and pollution and ways to maintain a viable farm community while recognizing legitimate environmental goals.

The scientists in that college have been strong contributors to the national research program in marine aquaculture and in resource and environmental economics. In fact the University of Rhode Island is unique, I believe, among the land-grant universities in its long-term commitment to research and training in areas related to coastal regions. We are proud of the results.

The Coastal Institute on Narragansett Bay will only be possible because of this accumulation of experience and tradition which distinguishes our University.

I want to bring your attention to two special features of the Coastal Institute that would be built with the federal portion of the funding, which, as you know, is already matched with \$12.56 million in contributions provided through public bonds by the taxpayers of the State.

First is the experimental economics laboratory. This laboratory will be the most technologically advanced of any in the nation. It will be the only such laboratory that will be primarily focused on research related to the nation's problems associated with managing our natural resources in an environmentally sound way and to the sustainability of our farming system.

Not only that, the University is already working to develop the type of relationships with private industry and government, including the armed services, which will result in research and training programs utilizing this laboratory which will be of interest and benefit to all concerned. I believe that it is critical for the future of Universities and all of society that these types of relationships be created and fostered.

Second is the aquaculture research facilities. The U.S. aquaculture industry (except in the case of catfish in the South and trout in Idaho) is lagging behind the rest of the world. This multibillion dollar industry can be important to the nation's general economy and in particular to the rural communities in which it is typically located.

One difficulty for American aquaculturists is that the various states have demonstrated a real and valid concern for the impact of their operations on the coastal environment. The proposed research facility has the potential to make significant contributions to developing environmentally appropriate production systems.

The University of Rhode Island is currently in the process of structuring itself to meet the challenges of the 21st century. The Coastal Institute on Narragansett Bay is an important part of our vision for the future, providing the nation and the world with a center of excellence in matters related to coastal environments.

I hope that the federal government will be in a position to join with the citizens of the State of Rhode Island in fulfilling this vision.

---

#### STATEMENT OF ROBERT H. MILLER, DEAN AND DIRECTOR

Dear Mr. Chairman:

I am writing to provide testimony in support of a facilities grant of \$9.72 million for funding to complete first phase construction of the Main Campus Building and Aquaculture facility for the Coastal Institute on Narragansett Bay of the University of Rhode Island. I am pleased and highly appreciative of the \$2.85 million which Congress has already provided for these facilities. The recently completed design and engineering plans are forward looking and innovative and have enhanced the excitement associated with the formation and functioning of the Coastal Institute.



The Coastal Institute is a multi-college, multi-disciplinary organization at URI that will address the natural and human resource areas of coastal management in new and innovative ways. The College of Resource Development, of which I am Dean, will have major involvement in the Coastal Institute and the college's faculty have a long and distinguished history of involvement in coastal management issues. As you know the natural resource base and human population that are associated with the coastal areas regionally, nationally, and internationally are tremendously important.

Environmental and societal problems associated with coastal areas are already commonplace and solutions are dependent on being able to mobilize the best scientific and policy expertise available. The Coastal Institute is designed expressly to mobilize the considerable talent on the URI campus in a more focused manner. Strengths in human capital within URI than will be brought together through the Coastal Institute include faculty from:

- the Division of Biological Oceanography
- the Coastal Resources Center
- the Fisheries, Animal and Veterinary Sciences Department
- Ocean Engineering
- the Natural Resources Science Department which operates the RI Geographic Information System and the Environmental Data Center
- the Resource Economics Department.

The new Coastal Institute building will also provide the most valuable commodity needed for enhanced programming in coastal management at URI, that is quality space and unique research capabilities. The latter include the experimental economics laboratory and the aquaculture field laboratory. The experimental economics laboratory will provide a state-of-the-art way to use new electronic technologies to focus and resolve regional and national problems of natural resource management and resource sustainability. The experimental laboratory will enhance useful and necessary relationship with private industry and state and federal agencies. The aquaculture field laboratory will make possible research to enhance a potential growth industry by developing environmentally appropriate production systems.

The University of Rhode Island is currently structuring itself and its programmatic strengths to meet the challenge of the 21st century. The Coastal Institute on Narragansett Bay is an important part of the future and has the potential of being a state and national center of excellence in coastal management education and research.

Thank you for the opportunity of providing testimony in behalf of this request.

## ROCK PORT TELEPHONE COMPANY

## STATEMENT OF BOYD SPIKER, MANAGER

**INTRODUCTION**

Mr. Chairman, members of the subcommittee, my name is Boyd Spiker. I am the manager of the Rock Port Telephone Company in Rock Port, Missouri. Rock Port's service territory covers about 200 square miles, or an area about three times the size of the District of Columbia. Our cooperative has 260 miles of telephone line in place to serve our 1,569 rural subscribers. That amounts to just over 6 subscribers per mile of line.

Rock Port Telephone Company is a member of the National Telephone Cooperative Association (NTCA) which I am also representing here today. I am the chairman of NTCA's Government Affairs Committee and a member of NTCA's Rural Electrification Administration (REA) Task Force which was formed two years ago to assess our members' use of, and future need for, the REA telephone loan program. The task force has also played a vital role in assisting the association in responding to the program's critics, and in working with Congress to assure a viable lending program for rural telephone systems in the future.

**REA'S TIME IS NOW**

With that in mind, let me begin by stating unequivocally that the REA telephone loan program's time is now. In recent years, Congress has built a substantial record on the subject of the relationship between advanced telecommunications infrastructure, its financing, and the economic health of this nation. The private/public partnership that is represented by the telecommunications industry's use of the REA telephone loan program has guaranteed all Americans enjoy the benefits of universal telecommunications service.

And why is universal service so important to rural Americans? For the simple fact that it guarantees they will have access to the same economic, health, education and yes, even leisure benefits that are accorded all other American citizens. If not common sense, then this nation's Constitution clearly mandates such a guarantee. Rural Americans have the same responsibilities and thus the same rights as do their urban counterparts. In the information age in which we live today, advanced telecommunications are essential to fulfilling that guarantee. The REA telephone loan program ensures this objective is reached economically. So it is easy to see that this program benefits rural telephone subscribers, not rural telephone companies. Clearly affordable advanced telecommunications infrastructure can in no way legitimately be viewed as a luxury.

**REA'S DUAL MISSION**

We have all heard critics of the REA telephone loan program point out that its work is complete because the vast majority of rural Americans receive at least basic telephone service. Yet what these critics consistently overlook is the fact that the program's mission is one of duality. Yes, our industry has arguably fulfilled its mission of providing basic telephone service to the majority of rural Americans. But that is only one half of the Rural Electrification Act's (RE Act) telephone loan program mandate -- to both furnish and improve rural telephone service.

And that is exactly what Rock Port and so many other rural telephone systems have been doing -- working in partnership with the REA to furnish and improve rural telephone service. In fact, small rural cooperative and commercial telephone systems like Rock Port are leaders in this regard. Such would not have been the case without our REA partner.

But it isn't just the RE Act's dual mission we are fulfilling for rural subscribers. Congress and the Federal Communications Commission have long advocated the installation and maintenance of a system of universal telecommunications service. Such a national network is essential to national defense, international competitiveness and global leadership. And again, our REA partner has played a central role in our ability to contribute to meeting this challenge. REA is continuing to help us through the Distance Learning and Medical Link Grant Program that became operational in February.

**THE RURAL DENSITY FACTOR**

You may have noticed that I have repeatedly referred to "affordable advanced telecommunications services." There is a good reason for that. The provision and improvement

of rural telephone service remains an extremely high-cost undertaking. Why? Because of the low density of subscribers in rural America. As I mentioned, in my cooperative's service territory we have a mere six subscribers per mile of telephone line. Conversely, urban areas will typically have at least ten times that number of subscribers per mile of telephone line. That simple fact says it all. Low density equates high cost. Without the REA's telephone loan program, many of the nation's rural citizens would be without telephone service of any grade today. Just another reason why our partnership with REA is so important to our success.

#### **WITHSTANDING THE TEST**

The debate surrounding the REA telephone loan program is nothing new and in fact dates to its creation decades ago. Nevertheless it is disheartening to see the accomplishments, and mission, of this premiere rural economic development program consistently distorted. Since late 1990, the REA telephone loan program has been subjected to the most prolonged and intense scrutiny probably ever faced by any other federal program -- despite its excellent record of achievement. In August of 1990, the Bush administration ordered the shut-down of the program, first in Indiana and then nationally. Thanks in large part to the efforts of this subcommittee, the program was eventually restarted but the temporary shut-down was the beginning of unprecedented unsubstantiated attacks on the program's credibility.

In 1991 and 1992 the Associated Press; nationally syndicated columnist James Kilpatrick; the Wall Street Journal and even CBS's *60 Minutes* leveled accusations against the program. The REA's own administrator even joined in the fray issuing the critical report *Return to the Mission*. In the midst of it all, Sen. Simpson (R-WY) and Reps. Solomon (R-NY), Santorum (R-PA) and Porter (R-IL) were busy fueling the fire, even though Congress was successfully discrediting every single one of the critical charges.

Unfortunately the cascade has not abated, and thus far in 1993 the Readers Digest; the Democratic Leadership Council's Public Policy Institute; ABC's *Prime Time Live*; and television's Crossfire have continued the barrage. It is clear the critics do not want to be illuminated about the role this program plays in maintaining the universal telecommunications infrastructure and the role it could play in the creation of so-called "information highways" that appear to captivate everyone's interest today. But what I find most amazing of all is the fact that not one of the critics will acknowledge the fact that this program, with its \$10 billion dollar portfolio, has never lost a dollar. Such a feat is unique among federal credit programs.

#### **CLINTON'S MIXED SIGNALS**

Whether you are a Democrat or a Republican, I am convinced that deep in each of our hearts lies a real desire for President Clinton to succeed in his efforts to improve the national economy. Whether you believe the economy is suffering or not is beside the point. Americans believe there is always room for improvement. Nevertheless, no objective can succeed if its approach is flawed. Unfortunately, the rural telecommunications industry is concerned that this may be the case with regard to the President's economic initiative.

What am I talking about? Quite simply that the REA telephone loan program with its 44 years of effective, sound and economical experience is not being asked to play a leading role in the president's revitalization initiative. But even more important than that is the fact that by the president's own estimate, the fiscal year 1994 savings of his proposal to raise the REA direct loan program's interest rate to Treasury's cost of money, is a paltry \$7.5 million. Yes that is real money to you and I, but when you consider the more than \$4 billion the president is proposing for short-term economic stimulus spending, \$7.5 million is a drop in the bucket -- and is not representative of sound policy.

#### **APPROACH REA WITH SYMMETRY**

Our industry recognizes the dilemma of the nation's spiralling debt. In fact we took the bold step 12 years ago of agreeing to freeze the REA telephone loan program's funding levels in an effort to help control this problem. The freeze has remained in effect in each of the succeeding years and today the industry is proud of the leadership it has displayed in this regard. If there were no other way, I am sure our industry would respond to the call again. But we can not shoulder the burden alone. It is imperative that Congress and the president remain cognizant of this industry's record, and of the role it should play in economic revitalization, as they move forward on the president's economic proposals.

Because advanced telecommunications, its financing, and the economic health of the nation are all intertwined, it is imperative that the most effective REA financing system possible be in place for the benefit of rural subscribers into the next century. In this regard, Congress and the president must pay particular attention to the following issues:

- \* a substantial amount of low-cost capital must always remain available for the most high-cost hardship and emergency situations;
- \* program interest rates must remain affordable and should involve safeguard provisions to protect against the possibility of changing economic conditions that could lead to unaffordable rates;
- \* current program capital levels must be maintained to guard against the possibility of a future shortfall of alternative sources of capital, and;
- \* REA's staffing levels and technical and engineering expertise should not be compromised.

Finally, Congress and the president must never forget that the REA telephone loan program is one of the best jobs programs in operation. It creates thousands of jobs directly and hundreds of thousands indirectly. Some have even suggested the REA's technical and engineering standards division could be beefed up with technical professionals that are being displaced by the downsizing of the military industrial complex. The rural telecommunications industry would welcome an enhancement of this REA function which is so essential to the success of an integrated universal service network.

The REA telephone loan program also saves federal dollars in the areas of health care and education. By upgrading the nation's infrastructure we are ensuring the availability of interactive health and education links that in the long run save money.

#### **RTB DILEMMA**

One final and very important point about the REA telephone loan program cannot be overlooked. As you know, this program is comprised of REA direct loans, REA guaranteed loans and Rural Telephone Bank (RTB) loans. The three-tiered nature of this program is what makes it work. Unfortunately I must report to you today that one of those parts -- the RTB -- is not being allowed to function properly.

The problem I am speaking of is the manner in which the Federal Credit Reform Act of 1990 (FCRA) has been interpreted in its application to the RTB. For two years considerable confusion has existed as to the extent to which the FCRA is applicable to the RTB. Ultimately, the administration with the concurrence of the House and Senate Budget Committees, determined that the RTB's imbedded low cost capital and repayments of principal and interest would be walled off from the RTB, preventing it from continuing to make loans at its cost of money as is mandated by the RE Act. The effect has been devastating.

Because the bank no longer has access to its own assets and equity (cash reserves and outstanding principal and interest repayments) to fund new loans, it has been forced to borrow funds from Treasury to finance every new loan it approves. As you may have guessed, the result has been escalating interest rates. Despite the rising interest rates, the real travesty is the fact that the borrower's equity stock is also walled off and thus the bank is a bank in name only. Its future is uncertain and frankly we question how long it will remain viable should borrowers move to alternative sources of financing. It is time the Congress and the president addressed this issue. The RTB must either be fixed or liquidated. To render it ineffective and hold borrower stock captive any longer is wrong. It is as simple as that.

#### **COORDINATION, COOPERATION, EDUCATION**

The rural telecommunications industry is particularly concerned with the lack of coordination and cooperation that appear to be representative of federal telecommunications policy today. The courts, Congress and the administration and its agencies must remain abreast of one another's telecommunications policy activities and the telecommunications programs that are currently in place. In addition, these entities must also educate themselves about the industry for which they are setting policy. It is imperative that each understand the responsibilities and capabilities of rural telephone systems.



The majority of NTCA's members have infrastructure in place that is of a quality that it is capable of carrying out the linkage concepts (interactive education, health care, and business links) that are currently being advocated nationally. The only place problems typically arise are in allocation of the cost of installing last-mile feeds and identifying sources of financing for the end-users to install end-user equipment such as video screens and computer equipment. Once these two barriers are overcome, the capabilities of existing local exchange carriers are generally unlimited.

#### CONCLUSION

To conclude Mr. Chairman, let me just run through the main points of my message today. The REA telephone loan program's time is now. The program has a dual mission of providing and upgrading rural telephone service. Rural subscribers, not telephone companies, are the beneficiaries of the program. The low density associated with rural areas today is a key reason for the great need of low-cost REA capital. This program has withstood the test of time. It is ready to participate in the president's economic initiatives. Any changes or reductions in the program must be accomplished with symmetry. All facets of the REA telephone loan program must remain effective and operational, including the RTB. Coordination and cooperation and education are the only means by which we will maintain an effective universal telecommunications infrastructure.

Rural America in conjunction with the rural telecommunications industry can be our nation's future. Making efficient use of this industry's resources should be our highest priority. It is my sincere hope that Congress and the president will use our industry and its resources. We are ready willing and able. Thank you for your time and consideration. I would be happy to answer any questions.



## RODALE INSTITUTE

## STATEMENT OF JOHN HABERERN, PRESIDENT

Mr. Chairman and members of this subcommittee, I am John Haberern, President of the Rodale Institute, a nonprofit agricultural research, demonstration and education organization located in Emmaus, Pennsylvania. I appreciate this opportunity to testify to the need for funding a Sustainable Agriculture Technology Development and Transfer Program through the U.S. Department of Agriculture's Cooperative Extension Service and a Composting Research Program through the U.S. Department of Agriculture's Agricultural Research Service. In addition, I am also requesting a continuation of funding for the Penn State/Rodale Center for Sustainable Agriculture and Natural Resources in Urbanized Environments (SANRUE), the Sustainable Agriculture Research and Education Program and the Agricultural Ecosystems Program through the U.S. Department of Agriculture's Cooperative State Research Service.

As you are aware, American farmers are the most productive in the world. However, they face many problems today which threaten the future viability of farming. They face continuing problems of profitability and competitiveness and are also confronted with the need to produce food and fiber in ways that focus attention on water quality, soil erosion, pesticide residues, worker health and safety, and other environmental concerns.

Our agricultural researchers continue to yield an extraordinary array of scientific information and technology that has made our farmers very productive. However, emerging knowledge of potential long-term effects on the environment and human health associated with some agricultural practices, coupled with concerns for sustainability and financial viability suggests the need for new research and information priorities.

SUSTAINABLE AGRICULTURE TECHNOLOGY DEVELOPMENT AND TRANSFER PROGRAM - COOPERATIVE EXTENSION SERVICE

In the 1990 Farm Bill, Congress authorized the development of research and education programs that will promote sustainable agricultural production systems and practices. As part of these programs, Congress recognized the need to better train Extension personnel and authorized the Sustainable Agriculture Technology Development and Transfer Program in Chapter 3 of Subtitle B, Chapter XVI at a funding level of \$20 million per year.

Since passage of the 1990 Farm Bill, this program has not received any funding. However, we were pleased that President Clinton has requested \$3 million for the Extension Service for sustainable agriculture in his FY 1994 budget request.

State Extension Service Directors, as well as farm, crop, livestock, sustainable agriculture, consumer and environmental organizations agree that there is a great need to provide this training. It is rare for these diverse groups to support and endorse the same programs, yet there is strong agreement that the Extension Service needs to be strengthened to provide the assistance described in Chapter 3. Extension agents and agricultural professionals must be better prepared to provide the knowledge and educational programs needed by American producers.

The environmental challenges facing American farmers and ranchers will continue to increase in the coming years. Extension agents have exclusive "grass-roots" networks to facilitate technological

transfers among farmers and ranchers, which enable them to successfully respond to a competitive market and environmental and natural resource challenges. However, these agents must be trained themselves. It is imperative that we move quickly and expeditiously to provide training for these agents and facilitate the transfer of available technologies.

Since the inception of the Rodale Institute and the Institute's Research Center, we have been working directly with thousands of farmers and extension agents across the United States. Our main thrust is to help them with information and research to explore production options which are profitable, yet have a positive effect on the environment and the natural resource base. Our work started years ago and we are active participants in USDA's Sustainable Agriculture Research and Education Program (SARE). In addition, the publisher of our New Farm magazine has recently been appointed to the Secretary's National Sustainable Agriculture Advisory Council. I have been appointed to the Secretary's Agricultural Science and Technology Review Board.

From the beginning, farmers told us that even though they wanted to try new sustainable systems and technologies, they got little information to help them make the transition to sustainable agriculture. Also, available information was not in a format that was practical and easy to apply to their operation.

What can we do to get the sustainable agriculture research findings to farmers? Well, we had several positive meetings with Dr. Johnsrud, Administrator of the Extension Service, concerning the need for training for Extension personnel.

Thus, we are requesting a FY 1994 appropriation of at least \$8 million for a National Training Program in Sustainable Agriculture as authorized in Chapter 3 of Subtitle B of the 1990 Farm Bill. This funding would be divided evenly among the four already established Sustainable Agriculture Research and Education Regions to create a Regional Training Center with a regional director and state sustainable agriculture coordinators within each region. The regional centers will be located at existing facilities so that no funds will have to be appropriated for facility construction.

These Regional Training Centers will become locations for extension education on sustainable agriculture, drawing on the research knowledge of the agencies in the USDA involved in sustainable agriculture, state agriculture experiment stations, private and public research and educational organizations, and the practical experience of farmers especially those cooperating in on-farm research and demonstration projects. Rodale alone has 34 such cooperating farmers across the US in our on-farm network.

The centers will provide education and training in sustainable agriculture for extension personnel, experiment station researchers and other professionals involved in education and transfer of technical information. The goal will be to develop an understanding, competency, and ability to teach and communicate the concepts of sustainable agriculture among farmers and others they serve. The training of trainers is the output on which the success of the program will ultimately depend.

It is imperative that funding for Chapter 3 begins as soon as possible in order to meet the requirement in the 1990 Farm Bill that all agricultural agents of the Cooperative Extension Service complete a sustainable agriculture training program by 1995; all new Extension agents are required to complete the training within 18 months of employment. In addition to Extension agents, training will be provided to appropriate field office personnel

from the Soil Conservation Service, the Agricultural Stabilization and Conservation Service, and other professionals.

#### COMPOSTING RESEARCH - AGRICULTURAL RESEARCH SERVICE

Composting has become increasingly attractive as a viable waste management option, due mainly to landfill closures and to water pollution from urban and agricultural runoff and leachate. With urban development impinging on agricultural land, composting is a viable option for managing manures and municipal wastes together.

However, the Agricultural Research Service has not conducted research on the practicability and feasibility of co-composting selected fractions of rural and urban waste streams. It is possible that on-farm composting may contribute to ground water and surface water pollution, with nitrates and other solubles. Thus, farmers and other policy makers are forced to make their decisions without this critical information.

Both the House and Senate reports accompanying your fiscal years 1992 and 1993 Agriculture Appropriations included language directing USDA to undertake composting research and education as authorized in Section 1456 in the 1990 Farm Bill. However, the bills provided no specific funding levels for this important research. I am here this year to request \$350,000 for research on composting and co-composting urban and rural wastes at the Rodale Institute Research Center.

I have been meeting with former ARS Administrator and presently Acting Assistant Secretary for Science and Education, Dr. R.D. Plowman, and Acting ARS Administrator, Dr. E.E. Finney, Jr., and they agree that such research is urgently needed in view of the increased amounts of rural and urban waste streams being generated with no appropriate process technologies for their safe and beneficial use on agricultural and urban lands as soil conditioners and biofertilizers. In an April 29, 1993 letter (see attached) to myself, Dr. Finney states that "...from discussions with Dr. Dean Plowman, we in ARS consider research to further the conversion of farm and urban wastes into a resource by co-composting a high priority area."

At the Rodale Institute Research Center, we are now building a state-of-the-art farm-scale composting research and demonstration facility. This facility, the only one to our knowledge in the United States, will be used to evaluate various farm-scale compost-making methods and techniques, to assess the feasibility of composting various mixtures of wastes, and to monitor the composition of leachate from experimental composting systems under controlled conditions.

In view of the many potential environmental and agronomic benefits to be gained through co-composting of urban and rural wastes, and subsequent utilization of the compost, scientists at the Rodale Institute Research Center are requesting the \$350,000 to work cooperatively with Agricultural Research Service scientists on a composting research project.

In addition to farmers, the citizens of our country will benefit from this research through cost savings in waste disposal by the development of safe and effective waste recycling methods and decreased reliance on solid waste landfills. The production of high quality composts will help to ensure a publicly acceptable, economically viable, and environmentally sound program.

Penn State/Rodale Center for Sustainable Agriculture and Natural Resources in Urbanizing Environments (SANRUE) - CSRS

I would like to express my appreciation to the members of this subcommittee for your support of the Penn State/Rodale Center for Sustainable Agriculture and Natural Resources in Urbanizing Environments (SANRUE) and would like to request another \$100,000 for FY 1994. Our partnership with the federal government was very instrumental in SANRUE recently obtaining a \$1 million grant from the Kellogg Foundation to develop a model Regional Infrastructure for Sustainable Agriculture (RISA) in southeastern Pennsylvania. The infrastructure that we will be developing will be a support system for farmers within the community and will include consumers, policy makers, marketers and educators.

AGRICULTURAL ECOSYSTEM PROGRAM (AEP) - Cooperative State Research Service

The Agricultural Ecosystems Program (AEP) was established by Cornell in 1991 to identify ways in which agricultural and natural ecosystems affect each other's long-term well-being. In FY 1993, it was funded at \$575,000 through CSRS.

However, since these issues are national in scope, a consortium has been formed to establish a coherent framework for developing a more comprehensive and integrative approach to issues of agricultural ecosystems. The members of the consortium which are requesting \$1.5 million in CSRS funds to match their own funding are Cornell, University of Maryland, DuPont, Rodale Institute and the States of New York and Maryland. With these additional funds, AEP would address the agronomic and economic consequences of gradual climate change and nitrogen, pesticide and pathogen flows from agricultural ecosystems.

In closing, I would like to thank the members of this subcommittee and the other members of the Senate who have been so supportive of the Sustainable Agriculture Research and Education (SARE) program funded through the U.S. Department of Agriculture's Cooperative State Research Service. I hope that we can continue to count on your support for the SARE program and that you will increase the funding to \$10 million in FY 1994.

As discussed previously, I am requesting \$8 million for the Cooperative Extension Service's Sustainable Agriculture Technology Development and Transfer Program authorized in Chapter 3 of Subtitle B of the 1990 Farm Bill, and \$350,000 for the Agricultural Research Service's Composting Research Program as authorized in section 1456 of the 1990 Farm Bill. In addition, I am also requesting another \$100,000 for the Penn State/Rodale Center for Sustainable Agriculture and Natural Resources in Urbanized Environments (SANRUE) and \$1.5 million for an Agriculture Ecosystems Program in FY 1994 through the Cooperative State Research System.

Thank you again for all of your past support for sustainable agriculture and for this opportunity to present my written testimony. You have an open invitation to visit us at the Rodale Institute Research Center any time your hectic schedule permits.

LETTER FROM E.E. FINNEY, JR., ACTING ADMINISTRATOR,  
AGRICULTURAL RESEARCH SERVICE

Mr. John Haberern  
President  
Rodale Institute  
222 Main Street  
Emmaus, Pennsylvania 18098

Dear Mr. Haberern:

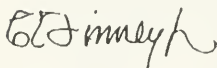
This letter is prompted by the testimony you presented on April 21, 1993, before the House Subcommittee on Agriculture, Rural Development, FDA, and Related Agencies chaired by Congressman Durbin. In this testimony, you make reference to joint research between the Rodale Institute and the Agricultural Research Service (ARS).

As you know from discussions with Dr. Dean Flowman, we in ARS consider research to further the conversion of farm and urban waste into a resource by co-composting a high priority area. We believe that the opportunities in this area are far greater than current practice would indicate. Development of the necessary technology and demonstrating its use would contribute substantially to reducing waste disposal problems and to developing a more sustainable society.

We are pleased with the effectiveness of the current cooperation between Rodale and ARS, and we would be pleased to strengthen that cooperative work, resources permitting.

The proposal in your testimony addresses an important problem and one we have recognized to be of high priority. However, current budget projections do not give us the freedom to implement such a plan.

Sincerely,



E. E. FINNEY, JR.  
Acting Administrator



RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY  
STATEMENT OF DR. FRANCIS L. LAWRENCE, PRESIDENT

## Statement Summary

This is a request for federal matching funds of \$1.7 million for FY1994, as final payment of a \$10 million USDA facilities grant to complete Phase I of the Plant Bioscience complex now being constructed on the Cook College/New Jersey Agricultural Experiment Station campus of Rutgers, the State University of New Jersey in New Brunswick. Rutgers already has received \$8.3 million of the federal contribution needed for Phase I.

In addition, Rutgers requests \$2.5 million in FY1994 of the \$10 million in federal funds needed to complete Phase II of the Plant Bioscience complex. This \$10 million for Phase II will be the final federal funds requested for the complex.

Rutgers and the State of New Jersey have already appropriated \$27 million in matching funds for the two phases of the complex.

Mr. Chairman:

I am Francis Lawrence, President of Rutgers, the State University of New Jersey, and I am here today to testify on behalf of the United States Department of Agriculture program that provides matching funds for constructing agricultural facilities at American universities. This program continues the great tradition of the Federal Government assuming an appropriate role in a federal-state-industry-university partnership to support our agricultural economy, a role that has existed since the Morrill Land Grant Act of 1862.

Rutgers now seeks matching funds for completing construction of a Plant Bioscience complex under this program. During the last six years this Committee has appropriated \$8.3 million for the planning, program design, and initial construction of the facility. Mr. Chairman, we are extremely grateful for your strong vote of confidence in developing the project thus far.

The sole purpose of this facility is agriculture; all space in the building will be used for teaching, research, and public service activities for New Jersey and United States agriculture.

The state and the university have appropriated \$27 million toward construction of the \$37 million first phase of the Plant Bioscience complex. The university has committed an additional \$10 million in ancillary facilities, such as greenhouses and containment facilities for genetically engineered plants. We are now in need of the \$1.7 million federal matching component to complete Phase I. We are also in need of \$2.5 million of the final federal matching funds of \$10 million to begin Phase II in a timely manner, to ensure that the momentum so far generated for New Jersey agriculture and the New Jersey Agricultural Experiment Station will not be lost, and to confirm that the original objectives of the project can be fully achieved.

The programs of the New Jersey Agricultural Experiment Station support the state's \$15 billion agriculture and food industry, an industry that is strong and viable, but, like agriculture throughout the United States, faces serious challenges. These challenges result in large part from urbanization and the associated pressures of competition for natural and human resources, the proximity of agriculture to often incompatible neighbors, and growing public concern over the impact of intensive agriculture on a fragile ecosystem. Although these are problems common to all agriculture, in New Jersey, the most urbanized state in the nation, we experience them sooner and more intensely. Our responses can serve as examples to others.

If these challenges are not adequately addressed, they will ultimately result in the deterioration, if not the demise, of agriculture in our state. I am certain that this Committee understands the value of maintaining the diversity of the nation's agricultural production systems and the importance of having healthy agricultural programs in each state.

To meet these challenges, the New Jersey Agricultural Experiment Station has taken the lead in developing a strategic master plan called Vision 21. Its goal is no less than to achieve premier status for Rutgers and its agricultural experiment station among the nation's land-grant institutions. We cannot afford second best because what's at stake is preserving our unique kind of agricultural production nearby and responsive to the nation's largest market; strengthening important food processing and packaging industries; protecting our fragile coastline and quality of our environment; properly managing our enormous toxic and hazardous waste problem; and harnessing new technologies, including biotechnology, to these ends.

Vision 21 is an appropriately aggressive plan. It calls for major capital resources to improve our research and teaching facilities, increased annual operating funds, and for the establishment of advanced technology centers. To succeed, we need to forge partnerships between public and private sectors, and state and federal funding sources.

The plan has been in place for seven years, and I can proudly report the following progress showing the clear commitment of our region, our state, and our university:

1. The New York/New Jersey Port Authority, in support of our marine industry, has provided \$13 million toward a \$21 million marine science center, which has now been constructed.
2. New Jersey voters recently approved a \$350 million Jobs, Education, and Competitiveness Bond issue in support of higher education. The bond, passed by the highest vote margin in the history of the state, provides over \$40 million in support of the agricultural experiment station.
3. During that same period the New Jersey Commission on Science and Technology provided \$8 million in new operating funds and \$10 million in capital construction funds in support of four advanced technology centers operating under the umbrella of the New Jersey Agricultural Experiment Station. These are centers in food science, agricultural biotechnology, food technology extension, and fisheries technology extension.
4. Rutgers, through its Fund for Distinction, has provided \$27 million in support of the capital building program at the experiment station. In addition, it has provided working budget increases of \$1.7 million to Cook College and over \$8 million in support of start-up costs for new faculty and new academic facilities. The university has also hired eight world-class scholars as part of its Excellence Program and located them at the New Jersey Agricultural Experiment Station.
5. New Jersey's food production industry also has begun to fund the station, by providing \$1 million in grant funding for our Center for Advanced Food Technology and by generating more than \$750,000 in support of the center's annual operating budget through membership fees.

Thus, over \$102 million for our capital needs and over \$10 million in new operating funds have been generated in support of the agricultural experiment station and its strategic plan, Vision 21. By any reasonable measure, these contributions provide the strongest possible evidence of commitment by the university, the state and the region to our land-grant mission and responsibilities.

We are grateful to this Committee, through its study, planning grants, and construction for our Plant Bioscience complex for being such an important partner in these efforts. This building underpins our philosophy that we must integrate the latest technologies with traditional approaches to solve the problems facing modern production agriculture and the environment, in an urbanized setting.

The complex, when fully developed, will allow us to appropriately house the Center for Agricultural Molecular Biology, a high-tech center consisting of sixteen world-class scientists and their support staffs under the direction of Dr. Peter Day, a world renowned agricultural biotechnologist and geneticist; it will also allow us to coordinate the center with the academic departments of Plant Pathology, Horticulture and Crop Science, Entomology, and Plant Bio-science by housing them together in a single facility.

The building will contain state-of-the-art research laboratories, conference, library, and educational facilities, and attached greenhouses. Associated with the center will be a branch facility in southern New Jersey for biological risk assessment, critically important for testing engineered plants and microorganisms.

With this fully developed complex, we will be able to integrate basic and applied research with extension activities to better ensure that agriculture in the Northeast remains profitable and environmentally sound. It also allows us to provide training for undergraduate and graduate students in plant biology to meet the growing demand for such scientists, who, we anticipate, will be in short supply.

Thank you for your consideration. My colleagues and I from the state, the university, and the agricultural community would be pleased to respond to your questions.

## SAINT JOSEPH'S UNIVERSITY

## STATEMENT OF FATHER NICHOLAS RASHFORD, PRESIDENT

Mr. Chairman, I am Nicholas Rashford, President of Saint Joseph's University, in Philadelphia. It is a pleasure to be appearing before your subcommittee again this year. Joining me today is Professor Richard Kochersperger, Director of our Food Marketing Program and Chairperson of our Food Marketing Department.

For three decades, Saint Joseph's University has played an important role in food marketing education. While our colleagues at land grant universities have worked to improve U.S. agricultural production through research, Saint Joseph's has concentrated on improving the marketing of agricultural commodities and products.

This was a natural undertaking for Saint Joseph's because of our location near the port of Philadelphia, one of our nation's most important points of commerce for agricultural and other products.

Over the years, the Saint Joseph's Department of Food Marketing has become the nationally recognized "academic home" of the U.S. food industry. Today, our Food Marketing Program is the only industry supported endeavor of its kind in the nation and is supported by a long list of food industry and farm-related companies and organizations.

Our Department of Food Marketing conducts food industry research projects, farm industry marketing research programs, executive seminars, internships and cooperative educational and research programs among students, agricultural sector government officials, farms, and farm cooperative and food industry executives.

As you know, we came before you three years ago to request your support in our effort to establish a Center for Food Marketing on our campus. We believe that the Center for Food Marketing will become a national resource for food marketing research, education, training, and information.

As you know, we have requested that the Federal government join in a 50-50 funding partnership with our institution and its industrial affiliates to finance the construction of the \$25,600,000 Center.

Recognizing the merit of the project, your Subcommittee already has provided us with at total of \$5,600,000 over the past three fiscal years, through the Cooperative State Research Service facilities program.

We are honored by the Subcommittee's confidence in our proposal, and its potential to dramatically expand the reach of our food marketing program to farmers, farm cooperatives and the food industry both in our region and nationally.

So that we may move forward expeditiously with construction of the Center, we are hopeful that the Subcommittee will provide us with a final allocation of Federal funds -- in the amount of \$6,750,000 -- in its FY 1994 bill. This final grant will allow us to break ground for the new center and begin initial construction activities in Fall 1993 and continue construction until completion sometime in Summer 1995.

Thank you, again, for your continuing support of Saint Joseph's University and the Center for Food Marketing.

## STATEMENT OF THE SOCIETY OF AMERICAN FLORISTS

The Society of American Florists, the only national trade association representing the interests of more than 23,000 small businesses in the floral industry, is pleased to have the opportunity to present testimony on the importance of the floral industry to U.S. agriculture and the need for federal funds to support research efforts in this industry.

The Society requests that this subcommittee consider allocating research dollars within the U.S. Department of Agriculture budget for two very important projects affecting the floral industry and, ultimately, all of agriculture in this country. We realize that given the current economic climate of the country and the ongoing efforts of the Clinton administration and Congress to reduce the deficit, requests made before this subcommittee for federal funds may be looked at with skepticism. For this reason, we will attempt to show you the value of these research projects to floriculture and general agriculture thus demonstrating how they qualify for funding through already established budgets.

First, some industry background. The floriculture industry is a \$12 billion component of the U.S. economy and is considered to be the fastest growing sector of U.S. agriculture. The industry grows, distributes and sells cut flowers, foliage, potted flowering and foliage plants and bedding plants for the American public. Small businesses, many times family-owned, characterize floriculture production and retailing. Figures from the U.S. Department of Agriculture show there are nearly 10,000 growing establishments in the United States, nearly 3,000 floral wholesalers and close to 30,000 retail florists spread throughout every Congressional district in the country. Census Bureau figures also show that more than 250,000 people are employed in commercial greenhouses, wholesale florists and retail florists. In addition, more than 42,000 acres of greenhouses, shadehouses and open ground are currently under floricultural production in the United States.

Floriculture is the most intensive form of agriculture. It has the highest capital investment of any part of agriculture. Greenhouse construction costs can begin at approximately \$175,000 per acre and can cost as much as \$800,000. Floriculture is extremely labor intensive, requiring as many as 12 workers per acre.



Furthermore, USDA figures show that the floral and ornamental horticulture industries--that is flowers, plants and nursery stock combined--represent 10 percent of all crop agriculture in the United States. This ranks the farm gate value of floriculture and ornamental horticulture crops ahead of wheat, ahead of cotton and ahead of tobacco, and behind only corn and soybeans. We hope it is apparent from this data that the floriculture and ornamental horticulture industry is a significant part of U.S. agriculture.

Next, some brief comments about research. Floriculture has traditionally been a model industry for agricultural innovation and technologies for improving efficiency and marketability. Domestic and international floriculture as well as general agriculture owe much to ground breaking floriculture research conducted by research scientists at Land Grant universities, ARS research facilities as well as those connected with the Cooperative State Research Service. Floriculture was the first to use automatic irrigation and fertilization, now standard for many agricultural commodities including corn and cotton. Trickle irrigation, derived from greenhouse watering systems, has revolutionized arid climate agriculture. Soil pasteurization to minimize crop loss from diseases was first developed in the greenhouse. Tissue culture propagation, first used on orchid plants in the 1950's, has led to an entire biotechnology industry in crop and livestock agriculture. Floricultural scientists have developed methods to conserve energy and water, prevent nutrient and pesticide groundwater pollution and reduce air pollution. Their methods are models for all of agriculture.

Despite all of these accomplishments, the floriculture industry has been overlooked time and time again in the federal budget. The fact that our industry is neither food nor fiber has impacted us greatly. Some people look at flowers and plants strictly as luxuries. But the fact remains that flowers and plants truly enhance the quality of daily life for the American public. Of course floral products are symbols of love, sympathy and joy. But beyond that, flowers and plants are proven to have psychological and physiological benefits, can reduce stress, have been shown to reduce indoor air pollution and provide therapy to the aging and to mentally impaired citizens. In addition, flowers and plants grown in this industry provide

satisfaction for the millions of Americans who enjoy gardening--cited by a recent national survey as America's favorite leisure activity.

The floriculture industry has never benefited from subsidies. Instead, the floriculture industry has invested in itself by donating more than \$250,000 to the USDA over the last five years for a cooperative program to develop new crops. The industry has also given about \$600,000 per year in research grants to Land Grant colleges from endowments and foundations in the industry. An additional \$1.5 million is provided annually from private organizations to support ongoing floriculture research programs.

But research funding for floriculture crops is still woefully inadequate. Current competitive grant programs and other public funding mechanisms are unable to meet the floriculture industry's research needs, and as such, the ability of the U.S. industry to compete effectively in the world marketplace is hampered. In fact, during the ARS hearings held in the spring of 1991, former congressman Bob Traxler from Michigan said for the record that only \$5.8 million of the ARS budget--less than one percent of the total budget--was dedicated to research on floral and nursery crops. Is this really fair considering that this industry constitutes 10 percent of all crop agriculture?

Therefore, the Society of American Florists would like to submit for the record two research proposals for funding consideration. The first proposal addresses the issue of preventing runoff of water and fertilizer from floriculture crops. Runoff and subsequent groundwater contamination is a critical issue facing all of agriculture today. This funding request is for \$916,000. The second deals with research to control and eradicate the sweetpotato whitefly on floriculture crops. The pest is a major problem not only in the floral industry but on vegetable crops and cotton as well. This project is estimated to cost \$875,520. The funds for both of these projects should be made available under a competitive grants program administered by ARS. What results can we expect from these research projects? If past experience in the floral industry is any indication, we firmly believe that the return on the federal investment for these two projects will be of enormous and far reaching proportions.

In conclusion, floriculture truly is a significant and growing part of U.S. agriculture. The statistics alone clearly show this. But we also want to point out that USDA has recognized this fact by appointing a national chair for floriculture funded by ARS to evaluate the research needs of this industry and provide recommendations to the USDA on the short term and long terms needs of the floriculture industry. The results of this study will be released later this year.

Finally, we want to make it clear to this subcommittee that the floriculture industry should have the same opportunities for research dollars that other parts of agriculture have. Floriculture's importance to U.S. agriculture and the wide ranging benefits floral products provide to the American public cause us to demand no less.

## SOCIETY FOR ANIMAL PROTECTIVE LEGISLATION

## STATEMENT OF CHRISTINE STEVENS, SECRETARY

We believe that the reorganization of the Animal and Plant Health Inspection Service (APHIS) in 1988 had a severely adverse effect on enforcement of the Animal Welfare Act. Combined with insufficient funding, the directions to the staff of Regulatory Enforcement and Animal Care (REAC) from the former Administrator and former Deputy Administrator of APHIS downplayed serious inspections and enforcement in favor of vague goals described as "educational". Fortunately, committed inspectors and other staff continued to carry out their work despite lack of encouragement.

President Clinton has stated: "I have always loved and respected animals and abhorred any cruelty toward them. Please be assured that a Clinton Administration would be extremely sensitive to these issues and concerns." The new Administration must be given the opportunity to honor the standards of the federal Animal Welfare Act (AWA) and revivify the nation's only comprehensive federal law on the welfare of animals. To do that a minimum of twenty-three million dollars must be appropriated.

## RULING ON IMPROVED STANDARDS FOR LABORATORY ANIMALS AMENDMENTS

On February 25, 1993, more than seven years after Congress enacted the Improved Standards for Laboratory Animals (ISLA) Amendments to the AWA, US District Court Judge Richey issued a ruling upholding the Congressional Mandate for exercise for laboratory dogs and an environment adequate to promote psychological well-being of laboratory primates. Judge Richey found the final regulations promulgated by USDA, which rely on "performance standards", arbitrary and capricious.

In issuing his ruling the judge stated that the regulations "...do not provide the minimum requirements mandated in the Act. 'A dog is man's best friend' is an old adage which the Defendants [USDA, Health and Human Services, and the Office of Management and Budget] have either forgotten or decided to ignore. Hopefully the new Secretary will ensure that the bureaucracy he inherits and the special interest groups with which he must contend will be forced to remember this sentiment and comply with the law."

Referring to special interest groups' efforts to delay implementation of requirements under ISLA, the judge stated, "...former Judge J. Skelly Wright of our Court of Appeals once said, in essence, that the regulators in Washington are regulated by the regulated. This may well be the case here. If this is so here, then something needs to be done to change the process."

The judge's order states that USDA must promulgate new regulations, "without unnecessary delay", under ISLA. The judge further ordered that the Plaintiffs [Animal Legal Defense Fund, Society for Animal Protective Legislation, Drs. Roger Fouts, Bernard Migler, and William Strauss] "may make further application to this Court in the event that the Defendants do not act with all deliberate speed...."

The Plaintiffs look forward to the prompt promulgation of sound regulations.

## ANIMAL WELFARE ACT ENFORCEMENT RESPONSIBILITIES OF USDA

The U.S. Department of Agriculture has a tremendous responsibility in assuring that the minimum standards of the Animal Welfare Act are met at research facilities, dealers' premises, animal exhibits, and during transportation by intermediate handlers and carriers. The number of sites in need of inspection are greater than ever before because the number of

facilities regulated by USDA has continued to increase. In 1992 there were 1,474 research facilities (with 3,495 separate sites), 4,400 animal dealers, 1,495 exhibitors and 442 animal carriers and handlers. Currently, the field staff consists of 49 Veterinary Medical Officers (VMO's) and 37 Animal Care Inspectors (ACI's) for a total of only 86.

Additional monies are desperately needed for more field inspectors so that every site can be visited at least three times a year. This is the minimum number of inspections necessary to assure steadfast, nationwide compliance with the law. Strict enforcement including prompt legal action must be pursued if the minimum standards are not met.

In our testimony before this distinguished subcommittee last year we requested an appropriation of \$23,048,399 to enable the Agency to carry out its responsibilities. Attached is a copy of the statement submitted last year by the Society for Animal Protective Legislation on behalf of more than 200 animal protective organizations who want to see the Animal Welfare Act adequately funded and properly administered.

#### OFFICE OF THE INSPECTOR GENERAL AUDIT

The report from the Office of the Inspector General (OIG) (March 1992) shows clearly the damage done under the Department's previous administration. The recent book, *Stolen for Profit*, by Judith Reitman details the regrettable performance by the former APHIS Administrator and his Deputy from an outside perspective.

The Animal Welfare Act must be enforced. Its requirements for minimum standards can no longer be allowed to be routinely violated as the Inspector General's Audit clearly shows them to have been. For the use of this distinguished Subcommittee, I submit a copy of the Inspector General's findings, some of which are listed below.

"Our audit concluded that APHIS cannot ensure the humane care and treatment of animals at all dealer facilities as required by the act. APHIS did not inspect dealer facilities with a reliable frequency, and it did not enforce timely correction of violations found during inspections."

16.2 % of facilities whose inspection reports were reviewed had not received even one inspection in the past year! More than half of the facilities were not in compliance with the Act. 80.8% of the facilities with violations had not received timely follow-up inspections.

"The infrequency of inspections occurred because APHIS expects a limited number of qualified inspectors to perform a large number of inspections."

There were seven dealers identified who had violations which were not corrected and were cited during 3 or more inspections.

"Of the 22 licensed breeding facilities we visited, 17 had not properly identified the animals. In addition, 14 of these facilities did not maintain adequate inventory records."

"...85.6% of inspections performed in Missouri required a follow-up inspection because of identified violations."

We agree with the Inspector General's audit that facilities which do not meet the minimum standards of the Animal Welfare Act should not be in business. The audit stated that of 284 licensed facilities reviewed, 49 licenses were renewed despite the fact that the facilities were not in compliance with the Act's minimum standards. Licenses should not be renewed for facilities that have repeatedly failed to meet the minimum standards.

As stated in the audit, distribution of memoranda as was done when Veterinary Services was administering the Animal Welfare Act (prior to the reorganization) should be reinstated. It is essential that the entire field staff receive the same instruction, the information is available for future reference, and the position of the Department is clear to all.



The Audit itself has not been supplied to the field staff. Instead, bland statements, that the inspectors were told to use as responses when they receive inquiries about the Inspector General's highly critical report, were handed out. This question and answer sheet is attached.

#### REGULATIONS ON PET THEFT ACT AND EXOTIC ANIMAL AUCTIONS

Lifting of the regulatory freeze will allow regulations on pet theft and exotic animal auctions, which have been found to be highly abusive, to be published this year.

The American public demands that serious attention be given to ending fraud and theft by laboratory animal dealers selling dogs and cats. The regulations on pet theft are in the final stage of departmental clearance.

This February, following a year-long investigation, the operators of D & T Kennels were convicted of criminal conspiracy and attempting to defraud the USDA. The defendants were obtaining random source dogs by answering ads offering animals "free to good home". The pets were then "sold" to D & T Kennels, a licensed dealer, using fictitious names in the records. The animals were then sold by D & T Kennels for use in medical research. Only one dog, Charlie, survived the experimental research and was rescued.

The Society for Animal Protective Legislation is a strong supporter of the Animal Welfare Act and its enforcement by USDA. We hope that sufficient funding can be forthcoming to assure well-being of animals under the law.

#### ANIMAL WELFARE INFORMATION CENTER

An appropriation of \$750,000 should be designated as a line item for the Animal Welfare Information Center (AWIC) at the National Agricultural Library. The Center was established in accordance with the mandate in the Improved Standards for Laboratory Animals Amendments calling for an information service to assist with laboratory animal employee training, to prevent unintended duplication of animal experiments, to help reduce or replace use of animals where possible, and to minimize animal pain and distress.

The AWIC has been a much needed resource to the research community (researchers, Institutional Animal Care and Use Committees, veterinarians and librarians) and can be to the staff of REAC. In the past AWIC has conducted workshops, provided grants, and exhibited at conferences. Unfortunately, an increasing percentage of monies designated for AWIC have been used to cover other programs within the National Agricultural Library. Committee report language should designate the appropriation solely for the AWIC and not for other purposes.

#### THE HORSE PROTECTION ACT

Limited funding has permitted inspection of only about 1/10 of the horse shows conducted in a given year. USDA is under great pressure from the Tennessee Walking Horse industry. \$500,000 is needed to permit inspection of more horse shows.

## THE ANIMAL DAMAGE CONTROL PROGRAM

Research efforts on non-lethal\* projects must intensify to meet the needs of the Animal Damage Control (ADC) field operations. An increased allocation of funding should go to non-lethal\* projects conducted by the Denver Wildlife Research Center (DWRC); we propose an increase from 55% to 70%. Funding for animal damage control field operations should be cut back until it can be demonstrated that new technologies are being employed and the proper treatment of animals is a priority.

### ADC Research Operations

Investigations should continue and expand on a number of worthwhile projects including chemical bird and mammal repellents, immunocontraception and "scare" devices.

We support appropriation of funds for the relocation of DWRC to Fort Collins with committee report language identifying the objective to accelerate research, availability and use of a variety of non-lethal\* control methods.

### ADC Field Operations

While the DWRC is making some progress in working on innovative techniques for less cruel means for controlling problem wildlife situations, the field program appears to be stagnating. Methods used, such as steel jaw traps, denning, poison baits and aerial gunning, are inhumane, indiscriminate and provide a large "body count" but not a long term solution to the predation.

Lack of concern about pain and suffering inflicted on depredating animals is prevalent. ADC continues to use the barbaric steel jaw trap, banned in more than 60 countries, and lobbies against prohibitions on steel traps before state and local legislatures.

Federal ADC trappers have long operated with an exemption from state game laws on checking for animals caught in traps. Many ADC trappers are only required to check traps twice a week! Any restraining trap will cause immeasurable suffering when holding an animal (which could be a non-target victim) for this length of time. In New Mexico recently, the State Land Commissioner banned federal ADC trappers from trapping on state lands because of their refusal to comply with the state trapping law regarding checking traps.

The archaic field program was best described by a state ADC officer who said, "We're feeding a dinosaur, and we'll go the way of the dinosaur."

-----  
 \*Non-lethal refers to methods such as repellents, chemosterilants and aversive techniques. We propose a research budget increase from 55% to 70% for non-lethal work.

## SOIL AND WATER CONSERVATION SOCIETY

### STATEMENT OF NORM BERG, WASHINGTON REPRESENTATIVE

Mr. Chairman, members of the Subcommittee:

The Soil and Water Conservation Society (SWCS) appreciates the opportunity to submit the following statement for the written record of your subcommittee's deliberations on USDA funding for fiscal year 1994. As a multidisciplinary membership organization, our mission is to advocate the protection, enhancement, and wise use of soil, water and related natural resources, and many of USDA's programs contribute directly to our nation's achievement of those goals.

The Administration's budget proposal for fiscal year 1994 agency funding employs a different format than was used in prior years, a format that makes agency-by-agency comparisons difficult. Therefore, in the attached table we show only the fiscal year 1993 funding provided by Congress in Public Law 102-341 (dated August 14, 1992), along with the amounts that we in SWCS believe are needed in fiscal year 1994 to carry out USDA's conservation responsibilities.

Our recommendations support a broad array of USDA programs. They encompass activities related to research, extension, cost-sharing, credit, and technical assistance--activities that help land-users solve their soil and water conservation problems.

From experience, we know that agencies typically prepare budgets that exceed the amounts proposed by the Administration. But we also know that these are difficult times financially for all levels of government. The drive to reduce the deficit and to deal with the ever growing national debt has broad public support. Therefore, the recommendations suggested by SWCS are indeed conservative, knowing as we do of the many complex conservation challenges faced by employees in the Soil Conservation Service, Agricultural Stabilization and Conservation Service, Farmers Home Administration, Extension Service, Agricultural Research Service, Economic Research Service, Cooperative State Research Service, and their clients. Members of SWCS are especially concerned about the future of the popular Conservation Reserve Program and the Wetland Reserve Program, which now operates in only nine pilot states. We also know that more emphasis is being placed on water quality and sustainable-agriculture initiatives within USDA.

This Subcommittee has a long record of supporting work authorized by the Congress to ensure the protection, enhancement, and wise use of the nation's basic natural resources. The Food Security Act of 1985 (FSA) and the Food, Agriculture, Conservation and Trade Act of 1990 (FACTA) contained several significant conservation actions. The most demanding for SCS has been the conservation compliance provision. The deadline for the 1.3 million landusers with highly erodible cropland to fully implement their conservation plans is January 1, 1995. Much good work has been done, but the next two years will be telling for both the farmers and the agencies providing the technical and financial assistance. Auditing of progress with conservation compliance plan implementation is probably going to accelerate, both within USDA and by outside interests. This provision of law must be taken seriously, as must implementation of the other two compliance provisions, sodbuster and swampbuster.

Many people, particularly environmental interests, view implementation of the compliance provisions as a test. Most of these people will judge the future of a voluntary, incentive-driven approach to environmental protection on the basis of our success with the compliance provisions. If conservation plans are not implemented fully and on schedule, or the swampbuster policy is not adequately enforced, pressure will

increase to seek a more regulatory approach by some of the organizations that enthusiastically supported the conservation features of the 1985 and 1990 farm bills. In fact, a voluntary, incentive-driven approach versus a regulatory approach could become an issue as Congress later this year considers reauthorization of the Clean Water Act and begins development of the 1995 farm bill.

There are several proposals in the 1994 budget that could impact the number of USDA field office locations. Also, there are substantial dollar savings projected as a result of USDA reorganization. Fund estimates seem to have reductions in staff as a goal. SWCS suggests that a hard look is needed at the estimated dollars to be saved; agricultural policy must not neglect natural resources policy. As USDA streamlining is being analyzed, the functions of agencies dedicated to conservation need consideration.

Several of the funding levels recommended for fiscal year 1994 are most supportive of a strong environmental focus within USDA. Pollution prevention and environmental protection must be high priorities. The Conservation Reserve and the Wetland Reserve Programs should be funded to allow additional bid offerings in fiscal year 1994. The 1990 farm bill included several conservation initiatives that have not been implemented, or fully implemented, the Water Quality Incentives Program among them. They need testing prior to enactment of the next farm bill. Research funding, particularly for the Sustainable Agriculture Research and Education program and related initiatives, also will be crucial if we are to provide the information needed for critical resource decisions in the future.

SWCS is dedicated to promoting an ethic that recognizes the interdependence of all people and the environment. To that end, we are concerned that the necessary resources will be in place to ensure that USDA agencies can do their work. The protection of our natural resource base is an essential component of our attempt in this country to put sustainable agricultural systems in place across the land.

USDA Agency	FY '93 Enacted	FY '94 Recommended	
	(In millions of dollars)		
<u>Soil Conservation Service</u>			
Conservation Operations	490.2	590.0	(1)
Soil Surveys	72.6	75.0	
Snow Surveys	5.7	6.0	
Plant Materials	8.1	8.5	
Grazing Lands		*10.0	(2)
CD Subtotal	576.5	689.5	
River Basins	13.2	11.7	
Watershed Planning	9.5	9.5	(3)
Watershed Operations	228.3	223.3	(4)
RC&D's	32.5	33.0	(5)
Great Plains	25.2	28.0	(6)
Total for SCS-----	885.4	1,000.0	
<u>Funds transferred to SCS</u>			
Office of Surface Mining	13.5	25.0	
<u>Agricultural Stabilization and Conservation Service</u>			
Agricultural Resources Conservation Program (ARC)			
Conservation Reserve	1,573.5	2,130.0	(7)
Wetland Reserve	0.0	**300.0	(8)

Agricultural Conservation Program(ACP)	194.4	200.0	(9)
Forestry Incentives(FIP)	12.4	15.0	
Water Bank(WB)	18.6	20.0	
Colorado Salinity Control Program	13.8	15.0	
Total for ASCS-----	1,817.7	2,680.0	

Agricultural Research Service

Soil and Water Conservation Research	81.9	90.0	(10)
Steep II Research	.6	.6	(11)

Cooperative Research Service

Hatch Act	168.8	175.0	
McIntire-Stennis(Forestry)	18.5	20.0	
Rangeland Research	0.5	1.0	
Sustainable Agriculture Research and Education(SARE)	6.7	20.0	
National Research Initiative	97.5	200.0	(12)

<u>Economic Research Service</u>	58.7	60.0	
----------------------------------	------	------	--

Cooperative Extension Service FY '93 Enacted-FY '94 Recommended

General Formula Funds	262.7	265.0	
Earmarked Programs			
Water Quality	11.4	16.0	
Pesticide Impact Assessments	3.4	4.0	
Pesticide Applicator Training	0.0	10.0	(13)
Integrated Pest Management	6.2	12.0	
1990 Farm Bill	0.0	25.0	(14)
Renewable Resources Extension Act	2.8	10.0	

Farmer's Home Administration

Soil and Water Loans(Direct)	3.5	10.0	
Soil and Water Loans(Guaranteed)	1.4	2.0	
Watershed Protection and Flood Protection Loans	4.0	8.0	
RC&D Loans	.6	1.2	
Farms for the Future		10.0	

SWCS Explanatory Notes

- (1)Conservation Technical Assistance(590.0 m)Funds needed for SCS and Conservation Districts to have field people needed not only to meet their responsibilities in the '85 and the '90 Farm Bills,but to continue the important soil and water conservation work throughout the nation.
- (2)Grazing Lands Conservation(10.0 m)The SWCS would support up to 20 m for added grazing land technical assistance.
- (3)Watershed Planning(9.5 m)Amount needed to service current applications and to fund water quality planning in high priority watersheds.
- (4)Watershed Operations(228.3 m)Amount needed for contracts.



- (5) RC&D's (33.3 m) Funds will support new RC&D areas and rural development activities. SWCS would support up to 50 m.
- (6) Great Plains (28.0) This is less than the \$ 40 million that was authorized for the Great Plains Conservation Program.
- (7) CRP (2,130.0) Amount needed to fund a 39.6 million acre Conservation Reserve in FY '94:  
Existing contracts---36.6 million acres @ \$50/acre=1,830 m  
1994 contracts----- 3.0 million acres @ \$50/acre= 150 m  
1994 cost-sharing---- 3.0 million acres @ \$50/acre= 150 m  
Estimate about \$65 million in carryover funds
- (8) WRP (300 m) Funds needed to support a nation-wide program to add substantial acreage to the present 50,000 to try to reach the goal of a 1 million acre Wetland Reserve. We would support the Administrations request.
- (9) ADP (200.0 m) This would include up to \$50 million earmarked for Water Quality Incentives Projects.
- (10) Soil and Water Conservation Research (90.0 m) Increased funds to be used to improve wind and water erosion prediction and control technologies, improve conservation and efficient use of water, and to develop management support systems for rangelands that are environmental.
- (11) Steep II (.6 m) This represents a request for a line item in the ARS appropriation for research for problems now lacking suitable technology.
- (12) NRI (200.0 m) These funds would be used for more research in the natural resource area, rural revitalization, and plant and animal systems for a sustainable agriculture.
- (13) Pesticide Applicator Training (10.0 m) This would be a direct appropriation to Extension instead of pass-through funding from EPA as in prior years.
- (14) 1990 Farm Bill (25.0 m) Funding needed to support the several new provisions authorized in the 1990 Farm Bill.

**PENDING REORGANIZATION OF THE U.S. DEPARTMENT OF AGRICULTURE**  
**A Policy Position By The**  
**Soil And Water Conservation Society**

The Soil and Water Conservation Society applauds efforts to reorganize USDA as a means of achieving greater economic efficiencies and providing for one-stop "shopping" at USDA field offices by farmers, ranchers, and other clients. SWCS also believes strongly that the conservation of soil, water, and related natural resources that underpin our nation's agricultural economy is an essential part of the service provided by USDA to the public at large and to the department's client groups. SWCS thus urges that the following principles guide decisions regarding the reorganization of USDA:

1. Reorganization must proceed directly from a clearly defined departmental mission statement that accommodates the idea of profitably producing an adequate, safe, and healthy food supply via the sustainable use of soil, water, and related natural resources. This implies a strong, adequately funded conservation focus that is responsive to the needs of the nation's farmers, ranchers, and other private landholders seeking to manage their land in an environmentally responsible way.
2. Production adjustment and related loan programs should be administered separately from natural resource conservation programs. Conservation programs within USDA, other than cost-sharing programs and those programs administered by the Forest Service, should be consolidated into one independent natural resource agency. The conservation programs administered by this independent

agency and the Forest Service should be the administrative responsibility of a single assistant secretary or under secretary.

3. Existing partnerships (including state and local interests) used to deliver conservation services to farmers, ranchers, and other USDA clients should be respected and used to the extent possible, given certain performance expectations, in a reorganized USDA. Those delivery systems should increase reliance on state and local governments, and support for those systems should come in the form of added personnel, training, and other programs that strengthen the partnership and eliminate duplication of effort both within and among levels of government.
4. Adequately staffed, co-located field offices of USDA agencies would allow for the efficient delivery of services at the local level in a much more client-friendly way, but co-location of field offices and the efficient delivery of services need not require a consolidation of conservation and commodity agencies. Shared administrative and related services in these co-located offices, as well as interactive computer systems, would not only improve economic efficiency but also simplify the administration of intersecting programs, such as conservation compliance.
5. USDA, through its natural resource agency, should retain leadership for nonpoint-source pollution control efforts, particularly those dealing with problems emanating on agricultural land; strive to resolve, on a continuing basis, natural resource management problems in urban and suburban areas, including the retention of prime and unique farmland; and continue to assume the lead role in determining the extent and condition of the nation's soil, water, and related natural resources on private land, if not public land as well, and how those resources are used (via the National Resources Inventory and National Cooperative Soil Survey, for example).
6. An aggressive, viable research program, coupled with an effective technology transfer capability, is an essential component of USDA, not only for what it can do to provide sound, timely information to policymakers, but also for what it can offer farmers, ranchers, and other USDA clients in the way of useful environmental management information. This research program must focus as much on the social sciences as on the physical sciences.

## SOUTH TEXAS HATCHERY

## STATEMENT OF MIKE YATES, OWNER/MANAGER

I have been requested, by Dr. Gary Pruder of the Gulf Coast Research Laboratory Consortium (The Consortium) to submit direct testimony relating to the benefits and effectiveness of the U.S. Marine Shrimp Farming Program (MSFP). It is my pleasure to do so.

**Background of our shrimp hatchery:**

Our shrimp hatchery is located at Port Mansfield, close to the rapidly developing shrimp farms on the South Texas coast. Largely with the use of a Small Business Administration secured loan, we started construction of our facility in December, 1991. Heavy rains and consequent low salinities prevented commercial production in 1992. We now have 140 metric tons of larval rearing capacity and expect to produce 14 million postlarval shrimp per month, for sale to the nearby shrimp farms. We intend to double this capacity by 1995.

**Our relationship with the Consortium:**

I was introduced to the objectives of the Consortium by Dr. Gary Pruder early in 1991. I was enthused by the potential of the developing technology and visited the Oceanic Institute's Hawaii facilities in September of 1991. I proposed to construct and operate a new wholly Specific Pathogen Free (SPF) shrimp hatchery in Texas.

**Assistance rendered by the Consortium:**

Since my visit to Hawaii in 1991, the directors, staff and associates of the consortium have given me considerable encouragement, advice, information and support.

Specifically, the Oceanic Institute Shrimp Manual of Intensive Shrimp Production Technology, by James Wyban and James Sweeney is a valuable reference. Several of the Consortium members have visited our facility. These include: Mr. Bill Bray, Dr. Addison Lawrence, Dr. Tzachi Samocha and Dr. Paul Frelie (all of Texas A&M University) and Ms. Kathy Hopkins and Dr. Steve Hopkins (of Waddell Mariculture Center, SC). In addition, Dr. Craig Browdy, Dr. Jim Wyban and Mr. Jim Sweeney have supplied valuable "hands-on" technical advice, via fax and phone. Annual seminars and frequent publications have helped to keep me abreast of new developments in the Consortium program. Finally, Dr. Bobby Eddleman and Dr. Gary Pruder have always been very supportive of my project and have directed me to relevant members of their staff. Valuable information and experience, gained through the Consortium program has thus been passed on to us.

I have received two batches of high health broodstock (one from the Oceanic Institute and the other from Waddell Mariculture Center). Unfortunately, heavy rains, and consequently low salinity, in this area prevented us from producing commercially last year. This year, however, we have received very heavy spawns from our SPF broodstock. Whereas one generally expects approximately 80,000 nauplii per spawn, we are harvesting more than twice this amount. Thus

far, all tests of both our broodstock and our nauplii have confirmed the continued "high health" status of our stocks.

**Effectiveness of the Consortium Program:**

The Consortium's SPF and related programs appear to be a great success. Reports from several aquaculturists, including ourselves, indicate that production in the U.S. has improved dramatically as a result. It is too early to tell, but the viability of the shrimp aquaculture industry in the U.S. may in fact depend on this technology.

The SPF program has been so successful that our domestic clients (the shrimp farmers) are insisting on high health seed-stock. In fact, the new regulations of the Texas Parks and Wildlife Department make it very difficult to sell non-high health stock. Foreign purchasers are likewise beginning to demand high health stock.

The work done by the Consortium also provides advantages to the U.S. aquaculture consultancy industry. Specific knowledge of the new technology, together with the prestige derived by such research breakthroughs, keep U.S. consultants in world-wide demand.

**The future of the Consortium program:**

From what I know of the proposed work of the Consortium, I believe that it has potential to further dramatically benefit the shrimp aquaculture industry, both domestically and world-wide.

This brings me to my only reservation related to the investment of public funds in this endeavor. My fear is that research, performed with the use of U.S. tax dollars, will benefit the U.S. for only a relatively short time. Our foreign competitors will rapidly adopt the new technology and exploit other competitive advantages to the detriment of our domestic industry and our economy.

I am not a proponent of artificial protection for U.S. industry. If we are to fulfill the Consortium's stated aim, "to reduce the United States trade deficit in shrimp", however, we need to identify and promote those activities within the industry which allow our producers a reasonably sustainable competitive advantage.

I thank you for this opportunity to express my views on this very important program. If I could provide further input, please feel free to contact me.

## UNIVERSITY OF SOUTHERN MISSISSIPPI

STATEMENT OF DR. SHELBY F. THAMES, PROFESSOR OF  
POLYMER SCIENCE

Mr. Chairman, distinguished Members of the Subcommittee, I would like to thank you again for the strong support and leadership on behalf of the University of Southern Mississippi and its Mississippi Polymer Institute. Funding support from the Subcommittee, since 1987 and continuing regularly through 1993, has enabled the Institute to make great progress in the field of polymer science.

In 1983, the Mississippi Legislature authorized the Polymer Institute at USM to work closely with emerging industries and other existing polymer-related industries to assist with research, problem-solving, and commercializing efforts. As an integral part of the basic research and educational mission of the Department of Polymer Science, the Institute provides industry and government with applied research, development support, and other commercializing assistance in key problem areas. This effort complements existing strong ties with industry and government involving exchange of information and improved employment opportunities for USM graduates. Most important, through basic and applied research coupled with the developmental and commercializing efforts of the Institute, the Department of Polymer Science will continue to address national needs of high priority.

A major goal of the Institute is to assist with commercialization of alternative agricultural crops through applied research and product development. The polymer industry is the largest chemical products industry in the world and heretofore has been highly dependent upon petroleum utilization. However, the efforts of the MPI are focusing on reducing our nation's dependence on petroleum usage via commercializing agricultural materials as petroleum substitutes. As we move forward with these commercializing efforts, our national dependency on imported petroleum and imported farm crops will diminish and the result will be new cooperative opportunities for American farmers and American industry. Your decisions will affect our ability to accomplish these goals as funding from this Subcommittee has enabled the Institute to implement and maintain an active group of university-based polymer scientists whose energies are devoted to commercializing alternative crops. We are most grateful to you for this support and ask for your continued commitment.

The faculty, the University, and the State of Mississippi are strongly supportive of the Mississippi Polymer Institute and its close ties with industry. Most faculty maintain at least one industrial contract as an important part of extramural research efforts.

Polymers, which include fibers, plastics, composites, coatings, and elastomers, play a key role in the materials industry. They are used in a wide range of industries including textiles, aerospace, automotive, packaging, construction, adhesive, medical prosthesis, and health care to name but a few. In the aerospace and automotive applications, their reduced weight and high strength factors make them increasingly important as fuel savers. Their non-metallic character and design potentials make them suitable for many national defense purposes. Moreover, select polymers are possible substitutes for so-called strategic materials, some of which come from potentially unreliable sources.

Polymer applications also includes advanced composite materials. These lightweight, high-strength polymer compositions



are replacing steel and other conventional metals in the housing, automotive, and aerospace industries. In the housing and construction industry, for example, an industry which represents the second largest market for polymer resins, polymers are used in the manufacture of doors, piping, thermal foam insulation, paint, floor and wall coverings, and windows.

As a polymer scientist, I am intrigued by the vast opportunities offered by American agriculture. As a professor, however, I am disappointed that very few of our science and business students receive training in the polymer-agricultural discipline and the enormous potential it offers.

I became involved in the polymer field 29 years ago, and since that time have watched its evolution where almost each new product utilization offered the opportunity for many more. Although polymer science as a discipline has experienced expansion and a degree of public acceptance, alternative agricultural materials are an under-utilized national treasure for this industry. Petroleum derived raw materials have heretofore made up the bulk of the raw materials for the polymer industry. However, there is less acceptance of petroleum derived materials today than ever before and consequently the timing is ideal for agricultural materials to make significant inroads as environmentally friendly, biodegradable, and renewable raw materials. These agricultural materials have always been available for our use yet society, for many reasons, has not recognized their potential. I would like to share with you four examples to support this tenet:

- First, mother nature uses the guayule plant to synthesize natural rubber or poly-cis-isoprene of higher quality than synthetic rubber that is prepared in a laboratory setting. In addition to high molecular weight natural rubber, at least four other coproduct fractions are obtained and we have developed commercially viable products from two of the four coproduct fractions. The products are chlorinated rubber, acrylated chlorinated rubber, strippable coatings, pressure sensitive adhesives, and 100% solids ultraviolet cured coatings.
- Secondly, we are exploiting the potential of Lesquerella, a crop that produces a triglyceride similar to castor oil. Castor oil is used extensively in industrial products and its entire U.S. supply, \$27-55 million, is imported. We have developed several products from lesquerella including polyesters, stains, foams, and pressure sensitive adhesives.
- Third, our greatest scientific minds, when pitted against the barnacle or zebra mussel, have only managed to pollute our national waters with copper, tin and other heavy metals. However, mother nature, via the Guayule plant, has provided a non-metallic, natural product(s) with significant biological activity against fouling organisms. We are working cooperatively with the U.S. Paint Corporation of St. Louis, Missouri as an industrial partner to commercialize this product.
- And fourth, the properties of flow, leveling, gloss, substrate and environmental protection, provided by coatings and paints manufactured from vegetable oils and other agricultural materials have not been equalled by even our brightest scientists. We are currently utilizing lesquerella oil in combination with other materials as a grinding aid for hard-to-disperse pigments. Our initial results indicate that it is far superior to commercially available dispersants and that it provides significant

anticorrosive benefits to water-borne coatings applied to metal substrates.

Thus, it is clear that commercial utilization of agricultural products can occur, but only after the commitment of the proper energy, organization, effort, and financial support. United States agriculture has made the transition from the farm fields to the kitchen tables, but U.S. agriculture's transition to America's industrial manufacturing facilities has been frightfully slow and has not kept pace with our national needs. With proper emphasis and support, U.S. agriculture can:

- Reduce U.S. reliance on imported petroleum.
- Maintain a healthy and prosperous farm economy.
- Foster new cooperative opportunities for American farmers and American industry.
- Reduce reliance on imported, industrially significant, strategic materials.
- Investigate potential opportunities for the commercialization of alternative crops in America.

These are exciting times in which to live and to contribute to the development of a powerful link between American industry and American agriculture. The U.S. Congress was wise to authorize, via the 1990 Farm Bill, the establishment of the Alternative Agricultural Research and Commercialization (AARC) Board and the National Centers concept. The National Research Initiative is still another means of promoting the value of U.S. agriculture. However, we must intensive our efforts to effectuate meaningful and definite progress toward revitalization of U.S. agriculture. It is my belief that our efforts should include:

- A restructuring of the traditional vision of one's mindset of agricultural crops so that they are viewed as raw materials for industry and as food sources for human and livestock consumption.
- Organization of a technical partnership comprised of motivated, creative, scientific and industrial leaders, representatives from the Federal Government, commodity groups, private firms, universities, and environmental groups with the objectives to determine non-food and fiber opportunities for America's agricultural crops. After sufficient study, the partnership would offer specific opportunities for commercialization of agricultural crops. This assignment would require time, study, and thought as any recommendation must be based on sound business and scientific principles interspersed with a proper ration of informed entrepreneurial risk-tasking. I suggest that these responsibilities be included as objectives of the National Centers.

Additionally, the partnership would offer seminars and instructional materials designed to:

- Provide information and data concerning our nation's environmental needs and challenges.
- Disseminate information regarding raw material composition of America's agricultural crops and the scientific and business opportunities it presents.
- Appreciate the significance of the economic viability of coproduct utilization.
- Cultivate an understanding of the economic challenges of growing, harvesting, and processing agricultural crops.
- Appreciate and promote the scientific merit and sophistication of American agriculture, just as scientists

understand the global petrochemical industry and the raw materials offered by the petroleum industry.

The result of the technical partnership's efforts would produce a healthy and objective debate and would be the basis for sound Congressional recommendations. This group should be prepared to withstand strict scrutiny and justify meaningful support from the U.S. Congress.

The image of American agriculture must be improved so as to entice the most intelligent minds and assertive personalities of our scientific and business communities. In short, American agriculture needs a higher profile. To this end, the technical partnership would raise the consciousness of the American public and the private sector for the utilization of renewable agricultural and forestry materials in the manufacturing of industrial products. This could be accomplished via:

- Establishing a dialogue on the Department of Agriculture's initiative to expand and accelerate development of new crops and new uses for agricultural materials.
- Discussion of market needs and the potential utility of agricultural materials to meet these needs.
- Incorporating new scientific and technical tools designed to accelerating products and process movement into the marketplace.
- Updating USDA's implementation of AARC.

The technical partnership should develop concepts embracing technical expertise as a justification for establishing national centers. They should recommend significant funding levels for research/development commercialization efforts on priorities established by the group, and they should monitor the activities closely to ensure conformity to the stated commercialization goals.

Mr. Chairman, your leadership and support are deeply appreciated by the entire University of Southern Mississippi community. While I can greatly appreciate the difficult financial restraints facing your Subcommittee this fiscal year, I feel confident that further support of the Mississippi Polymer Institute will continue the dividends of increasing commercialization opportunities of agricultural materials in American industry. Advances in polymer research are crucial to the food, transportation, housing, and defense industries. Therefore, we respectfully request \$1.2 million in federal funding to exploit the potentials of commercializing alternative agricultural materials and to continue our initiatives. Thank you Mr. Chairman and Members of the Subcommittee for your support and consideration.

## SOUTHERN REGIONAL AQUACULTURE CENTER

## STATEMENT OF C.G. SHEPHERD, DIRECTOR

Mr. Chairman, and Members of the Subcommittee: We would like to express our sincere appreciation for the opportunity to offer testimony on behalf of the five Regional Aquaculture Centers. Aquaculture continues to be a growing part of the U.S. economy, and the support this Subcommittee and other members of Congress provide for work to assist and improve this industry has been most helpful.

The Regional Aquaculture Center programs were authorized by Title XIV of the Agriculture and Food Act of 1980 and the Food Security Act of 1985 (Subtitle L, Sec. 1475[d]). The designated regions are Tropical/Subtropical, Western, Southern, North Central and Northeastern. Their programs coordinate aquaculture research and extension activities to enhance viable and profitable commercial aquaculture production in the United States for the benefit of producers, consumers, and the American economy. These programs complement existing research and educational programs by state and federal agencies. User inputs into development of the Center programs are assured since industry representatives participate in the decision-making processes via Industry Advisory Councils for each region. Technical expertise is provided by research and extension scientists serving on committees for each project developed.

The authorized level of funding for the Regional Aquaculture Centers is \$7.5 million annually. The FY 93 appropriation was \$4.0 million divided equally among the five Centers. We would like to request your support for the full authorized level of \$7.5 million for these five Centers in FY 94.

A trade imbalance exceeding several billion dollars exists for U.S. fishery products. Aquaculture, with a current production value approaching a billion dollars, is one of the most rapidly growing segments of U.S. agriculture. However, there are many issues and problems facing the industry that must be addressed before the full potential for profitable production can be attained. Very useful information has already been developed from research and extension work supported by the Regional Aquaculture Center programs. This progress will continue if adequate funding can be provided.

In the Southern Region alone, seven multi-year research and extension projects have been completed. These dealt with a market analysis and marketing potential of catfish and crawfish, improved aeration techniques, disease prevention and development of nutritional programs to improve species performance and product quality as well as lower production costs, and improved harvesting and grading techniques for aquaculture producers. Scientists working on these projects completed approximately 150 publications and ten videos dealing with production practices to assist the industry. Over 1500 copies of these materials are mailed each month by the National Agriculture Library. This is in addition to the numerous requests for the publications handled by the Cooperative Extension Services throughout the U.S. Implementation of these newly developed practices is already underway.

Our ongoing projects appear to be equally promising. The project, "Characterization of Finfish and Shellfish Aquacultural Effluents", which was initiated in 1991, involved scientists from nine universities and one state/federal laboratory. The purpose of this three-year study is to characterize effluents from finfish and shellfish operations and to identify best management practices that are sound technically and economically. Information from this study will be used to develop educational materials to help fish farmers and regulatory agencies better understand the problems both groups face.

In 1992, two three-year projects dealing with quality assurance for aquaculture products were initiated. The project entitled "Safety and Sanitation of Aquacultural Products--Microbial" will focus on microbiological aspects to assure premium quality products and considers production, processing and marketing phases of catfish, crawfish and rainbow trout. The project entitled "Aquaculture Food Safety--Residues" is designed to identify real or potential problems, if any occur, and to help industry continue to insure that safe and quality products are in the marketplace. The overall goal of this effort is to develop a program that will assure quality and safety of aquaculture products reaching the consumer. Initially, this work will include rainbow trout, crawfish and catfish.

Also during 1992, the Board of Directors approved two new project areas, i.e., "Improving Production Efficiency of Warmwater Aquaculture Species Through Nutrition" and "Delineation and Evaluation of Catfish and Baitfish Pond Culture Practices". These three-year projects will be developed through the Work Group method, and it is anticipated both will be initiated during 1993.

The Regional Aquaculture Center programs enable us to develop and coordinate aquaculture research and extension activities throughout the nation. Directors of the five Centers and USDA representatives work together to collaborate efforts among Center programs to address national aquaculture issues. We respectfully request that funding at the authorized level of \$7.5 million be provided these extremely important and successful programs.

Thank you for the opportunity to submit our testimony.



## TEXAS A&amp;M UNIVERSITY

## STATEMENT OF THE CENTER FOR MEAT AND POULTRY SAFETY AND QUALITY

Texas A&M University is uniquely qualified to be selected for one of the proposed centers as designated in Title XVI of the 1990 Farm Bill for the establishment of a Center for Meat and Poultry Safety and Quality. The Center for Meat and Poultry Safety and Quality will focus on improving the safety and quality of meat and poultry products provided for the consumer through research and educational efforts directed at all levels of production and marketing segments of the livestock and poultry industry. A comprehensive organization of individuals with expertise in all facets of production, processing, distribution and preparation will allow the Center to serve as an information collection and distribution point for the meat and poultry industry, regulatory agencies, foodservice and retail industry, and the consumer.

Assuring the safety and quality of food products is of great importance to the public. The Center will serve to conduct research with regard to freedom of meat and poultry from potentially harmful bacteria, residues, and other safety concerns and will provide solutions to problems of consistency and uniformity of product production and preparation. The Center will work with producers, processors, retailers and consumers in transferring new technologies and emphasizing components of food safety; will assist regulatory agencies in developing risk and science-based inspection systems; will allow for the long-term improvement in meat and poultry products that will assure greater consumer confidence; and will improve profitability opportunities for all segments of the industry.

The establishment of a Center for Meat and Poultry Safety and Quality at Texas A&M University will benefit from several excellent facilities that are already in place which conduct research and educational activities. Outstanding research laboratories are available in the Kleberg Animal and Food Sciences Center, Rosenthal Meat Science and Technology Center, Scoates Engineering Building, and within the College of Veterinary Medicine Complex on the campus of Texas A&M University. In addition to these facilities, construction is underway on a \$11.3 million Animal Science Teaching, Research and Extension Complex adjacent to the main campus. This modern facility will include centers for beef cattle, animal euthenics, sheep and goats, swine and nutrition-physiology. The complex is designed to enhance strong programs in modern livestock management and provide up-to-date classrooms, laboratories, animal-holding facilities and auditoriums for teaching, research and extension programs. A \$1.3 million Dairy Products Teaching and Research Center will be constructed on the West campus to complement the Rosenthal Meat Science and Technology Center. Construction of a \$38.5 million addition to the College of Veterinary Medicine is in its final stages.

In addition to outstanding facilities, several programs exist which complement the activities of the Center for Meat and Poultry Safety and Quality. Individuals from the College Station main campus, researchers from the Texas Agricultural Experiment Station, extension specialists from the Texas Agricultural Extension Service, and selected faculty from throughout the Texas A&M University System including Texas A&I University, Laredo State University and Prairie View A&M University may be called upon to support the programs of this Center. A critical mass of faculty in over 21 academic departments within more than 8 academic institutions and state and federal agencies exists to provide current program linkages with food emphases.

The Texas FoodSafe Program will serve to complement the Center's activities and respective programs on the Texas A&M University campus. The Texas FoodSafe Program stresses the vital importance of having each link of the food marketing chain-production, distribution and consumption-share in the responsibilities of the

safety of the food supply. This program reaches all phases of the food marketing system utilizing hazard analysis critical control points (HACCP), in addition to a widespread effort to address the concerns of consumers and the scientific community on food safety issues.

The USDA's Food Safety and Inspection Service National Training Center has been located on the Texas A&M campus since the late 1980s. Texas A&M faculty teach selected modules in meat chemistry, microbiology, trends in the meat industry and other related topics. Several USDA instructors serve as adjunct professors in various departments allowing significant interaction between Texas A&M faculty, staff, students, and USDA personnel. This involvement assures that research results are made available to meat inspectors in the shortest possible time. Collaborative research will also be undertaken with the USDA/ARS Food Animal Protection Laboratory.

Additionally, Texas A&M has been selected as the principal U.S. university in a University Cooperative Project funded by USAID related to animal diseases of importance to the United States and Mexico. As Texas will serve as the principal entry point for importation of livestock from Mexico under NAFTA, this state will be the center for much of the initial screening for zoonotic and food safety pathogens that are of particular concern for Mexican livestock.

Several research and educational components will be addressed in this Center and focus primarily on safety and quality initiatives. Without question, meat safety issues have been the focal point of media and consumer interests relative to food during the 1990s. Questions regarding the safety of meat and poultry products and whether or not consumers can be protected by the current regulations and guidelines often are in the headlines. Each outbreak of foodborne illness or alleged incident of improper procedures by the meat industry has eroded public confidence in the safety of meat products. Assuring meat and poultry safety cannot simply be an activity of the United States Department of Agriculture (USDA), but rather demands a comprehensive understanding of and sensitivity to potential problems from farm to plate. The following initiatives will be examined within the programmatic focus of the Center:

- On-Farm Reductions in Food Safety Related Pathogens
- Trace-back Investigations
- Reduction of Microbial Contamination
- Development of Rapid Microbiological Tests
- Risk Analysis
- Response of Bacterial Heat Resistance to Handling and Preparation Practices
- Foodservice and Retail Training Programs
- Consumer Education
- HACCP Implementation
- Meat and Poultry Quality

These initiatives will complement existing meat safety activities and will result in improvements in reducing the perceived and/or real risks associated with consuming meat and poultry. Although not specifically addressed in this proposal, seafood safety is a relevant issue of importance relative to meat safety and will be considered in the research programs.

The cost of establishing a Center for Meat and Poultry Safety and Quality at Texas A&M University and associated operations for FY '94 is \$4 million.

## STATEMENT OF THE CENTER FOR NORTH AMERICAN STUDIES

The profitability and future viability of the U.S. agricultural and food industries are critically dependent on strong, growing international markets. Canada and Mexico are now the first and third largest agricultural trading partners of the United States. The proposed North American Free Trade Agreement (NAFTA) will further boost trade and foster continued economic integration of the three countries. The growing trade and economic integration of the three North American countries is creating tremendous need and opportunity for cooperation in addressing key agricultural and food issues, such as foreign market opportunities for food and agricultural products, international trade and trade policies, natural resource and environmental problems in North America, and policy issues related to food safety and nutrition, plant and animal pest management, food marketing and distribution, and agricultural resource use.

A Center for North American Studies will serve as a primary means of identifying opportunities and addressing problems associated with growing agricultural and food trade and integration of North American countries. Such a center will provide leadership in promoting better agricultural relationships among the North American countries of Canada, Mexico, and the United States through cooperative study, training, and research. Authorization to establish a Center for North American Studies is provided in the Enterprise for the Americas Initiatives Act of 1992.

## Goals and Objectives of the Center for North American Studies

The overall goal of the Center for North American Studies is to promote strong agricultural ties among the three countries of North America. The Center will focus on cooperative study, research, and training programs to secure open, growing trade with our most important trading partners, to insure continued competitiveness of U.S. agriculture, and to foster greater cooperation among the three countries in addressing a broad range of critical agricultural issues of common interest. The specific objectives of the Center in each of the three program areas include:

## Cooperative Study

- Develop cooperative linkages with universities with internationally recognized agricultural programs in the United States, Canada, and Mexico to analyze the interaction and integration of the economic, trade, institutional, social, cultural, political, environmental, and technological dimensions of the agricultural and food systems of North American countries.
- Foster integration of university scientific research capabilities and private sector initiatives to study problems related to agriculture and natural resource utilization.
- Cooperatively build and maintain a database of information relating to North American agriculture in support of Center programs.

## Research

- Investigate issues relative to the competitiveness of the agricultural and food systems of North American countries, such as economic and technical change, general economic, trade, and agricultural policy linkages among North American countries, the consequences of freer trade under NAFTA and GATT, and institutional and strategic relationships in world markets.
- Analyze the natural resource and the environmental implications of increased trade and economic integration of North American countries, including issues related to environmental standard harmonization among North American countries, the cost and benefits of improved environmental quality, especially for transboundary natural resources (i.e., water and air), alternative institutional arrangements for addressing

oversight capabilities such as the monitoring and enforcement of environmental regulations, and environmental liability assignments.

- Examine production, consumption, trade, and policy issues related to pest management associated with the mobility and potential transfer of resources and agricultural products across borders, including alternative pesticide-use and management strategies, the development and transfer of technologies related to pest-resistant cultivars, the risk of pesticide exposure among farm workers, the extent and effects of organochlorine insecticide residues in migratory birds and on agricultural produce imported from Mexico and elsewhere, and the incidence of communicable animal diseases and parasites that represent serious economic and/or health risks.

#### Training

- Disseminate cooperative study and research results through conferences, workshops, seminars, and other training opportunities for small and medium-sized agricultural and food producers, agribusinesses, and potential exporters.
- Foster environmental management training and technology transfer for promoting sustainable development.
- Provide training for community-based strategies for integrating trade and environmental improvement programs.
- Provide academic training and practical experience to undergraduate and graduate students related to resolving the critical issues for North American agriculture.
- Provide executive training opportunities for agribusiness leaders relating to the critical issues for North American agriculture.

#### Organization and Operation of the Center for North American Studies

The Center for North American Studies would complement the ongoing international agricultural research and training programs within the Texas A&M University System on North American agricultural issues. The Center will include a consortium of universities and centers within the System. Each consortium member will build on its strengths and work together in cooperation with other established agricultural research and training centers and organizations throughout North America to achieve the overall goals of the Center.

The Center will be headquartered at the main campus of Texas A&M University with satellite centers at the participating consortium member locations. The Center will function as an administrative unit within the Agricultural Program of the Texas A&M University System. A unique feature of the Center for North American Studies will be the multi-university, multi-disciplinary approach to addressing the critical issues facing North American agriculture.

#### Cost

In the first year of operation of the Center, a primary focus will be the development of linkages and cooperative program operation and management mechanisms among consortium members and with other agricultural and food research and training organizations in Canada, Mexico, and elsewhere in the United States as needed. As the Center becomes established and cooperative study and research opportunities begin to expand, funding requirements will also expand from an initial \$500,000 in the first year to \$750,000 and \$1,000,000 in the second and third years, respectively.



## Proposed Budget for the Center for North American Studies

Expenditures	Year 1	Year 2	Year 3
Cooperative Study	\$ 200,000	\$ 300,000	\$ 400,000
Research	200,000	300,000	400,000
Training	100,000	150,000	200,000
TOTAL	\$ 500,000	\$ 750,000	\$ 1,000,000

Expenditures will be in three main areas: (1) personnel including primarily non-tenure track researchers and scientists, research associates, technicians, lab assistants, computer programmers, and other technical support staff, (2) capital expenditures including primarily purchases of computers and other analytical support equipment, and (3) supplies and other expenses related to training programs.

## STATEMENT OF THE CENTER FOR SOUTHERN CROP IMPROVEMENT

This is a request for \$7 million in federal appropriations to jointly fund the construction of a facility to house the Center for Southern Crop Improvement. Texas A&M University has approved the design of this facility and allocated \$8 million toward its construction. The complex will include a laboratory building, controlled environment chambers, and greenhouses with appropriate containment controls. It is a center that will contribute to the rapid advancement of crop breeding in the U. S. and throughout the world. The focus of its programs will be crops primarily grown in the Southern U. S. We are requesting that the \$7 million be appropriated to the USDA Cooperative State Research Service Facilities Grant Program. Ongoing operating funds for the Center will be provided by Texas A&M University and the Texas Agricultural Experiment Station. Additional support is being solicited through grants, gifts and endowments.

Last year this Subcommittee directed the USDA Cooperative State Research Service to prepare a feasibility report for this project. The study by CSRS has been completed and a report will be provided to this Subcommittee. The external Review Panel conducted a very thorough study of the project and I believe that their findings will be favorable.

*Crop improvement has high social and economic value.*

Crop improvement through crop breeding and associated activities has high social value. This activity has steadily increased crop productivity and product quality, as well as generated new products which stimulate downstream industries. The selection of plant products with improved nutritional value and quality directly improves human health. Moreover, integrating crop breeding and genetic engineering activities with production system development and integrated pest and disease management programs help ensure an environmentally safe, sustainable agricultural industry.

*New tools for crop improvement offer unlimited opportunity.*

Crop improvement depends on identifying and incorporating valuable new traits into elite germplasm for use by farmers. Molecular markers (RFLP, RAPD) are being developed which will dramatically improve the efficiency of crop breeding and allow scientists to select complex traits they cannot identify with existing technology. Just as molecular markers have allowed the identification of genes for human diseases, molecular markers in crop species will pinpoint genes for plant pathogen resistance, quality, stress



tolerance, maturity, etc. These genes will be tagged and monitored during crop breeding cycles. To exploit this opportunity, molecular markers, genetic maps, crop genetic databases, and specific tags for important genes need to be developed for important crops.

*A primary objective of the Center is to improve southern crops.*

Crop improvement depends on the quality and diversity of available germplasm. The ability to move genes into plants and specifically alter the expression of endogenous genes offers an extremely important new source of genetic diversity. Commercial bioengineering projects utilizing this technology include viral coat protein mediated virus protection, insect-resistant cotton containing BT protein, hybrid seed production facilitated through the specific expression of a foreign RNase, and anti-sense ACC synthase which prolongs shelf-life of tomato fruit. To exploit this opportunity for southern crops, transformation, selection, and propagation techniques need to be developed and accessible. Furthermore, transgenic plant production must interact with crop breeding programs, and integrated strategies for utilization must be developed.

*The Center will significantly expand collaborative crop improvement programs.*

Successful application of new molecular tools for crop improvement requires the integration of expertise in biotechnology, physiology, pathology, agronomy, economics, and crop breeding. Texas A&M University has a long-standing commitment and track record in the genetic improvement of crop species with major programs focused on cotton, rice, wheat, sorghum, timber and vegetables. The Texas Agricultural Experiment Station operates the largest public crop improvement program in the U.S., with more than \$7 million invested annually in crop breeding and genetics. During the past 10 years, Texas A&M University and the Texas Agricultural Experiment Station have developed expertise in biotechnology, and today, the Texas Agricultural Experiment Station invests \$12 million annually in biotechnology research programs at Texas A&M University and at research centers across the state. Because Texas A&M University has developed germplasm stocks, genetic resources, and related information on the physiology, pathogens, and quality aspects of cotton, sorghum, rice, wheat, trees, and vegetables, these crops will be targeted for research in the Center.

*Training, education, and information services will be developed.*

The Center will become a part of an existing network of crop improvement programs throughout the southern region and other adjacent regions. Programs initiated at the Center will stimulate multidisciplinary research by providing information, education and technology access. Training programs for graduate students, agricultural professionals, and international researchers will be developed. Through seminars, regional meetings, computer networks, and database development, scientists will gain knowledge and exchange information.

*This partnership is a solid investment in the future of U.S. Agriculture.*

The funds requested in this proposal are an investment in the development of new plant material to sustain the U.S. food and fiber supply and make U.S. agriculture more competitive in global markets. The returns represent a high dividend: economic advantage for U.S. farmers and agribusiness and high-quality, inexpensive food for U.S. consumers. The research conducted in this facility will build on existing strengths in crop breeding and take advantage of the rapidly emerging scientific field of molecular biology. It truly represents the future wave of technology advancement in crop improvement. This proposed partnership between Texas A&M University and the U.S. Government will provide a modern facility to enable this exciting program to move forward.

Thank you for the opportunity to present this proposal. I would appreciate its favorable consideration by the Committee.

## STATEMENT OF DR. MANUEL IBANEZ, PRESIDENT

"Diversification Programs for Rural, Semi-Arid Texas:  
High-Value Products from Mesquite and Cactus"

Mr. Chairman, members of the subcommittee, I am Dr. Manuel Ibanez, President of Texas A&I University in Kingsville, Texas. I am here to request support for our agriculture diversification programs for rural, semi-arid Texas based on high-value products from mesquite and cactus. I am requesting \$100,000 to continue these important research efforts. These two plants occur on nearly 100 million acres in the non-irrigated land resource base of Texas and other parts of southwestern United States and Mexico. Mesquite being a nitrogen fixing tree and cactus having a highly water use efficient photosynthetic pathway are outstanding candidates for low-input, sustainable economic development in some of the most destitute regions of our country.

From a financial point of view, one of the most serious world agricultural problems is that too many farmers are growing the same crops. This has resulted in excess supplies of the major commodities with farmers in France, Germany, Argentina and the United States are all competing in a global economy for market share and price.

The most logical solution to this dilemma is to diversify American agriculture by developing alternative crops for the land resource bases. As is true for economic development in the industrial sector, more economic growth from crop diversification would be expected to occur from small agricultural businesses than large agricultural corporations.

Texas A&I has been involved with economic development of mesquite for BBQ uses, flooring and lumber, food products from the pods and drought resistant ornamentals for over 12 years. For the last 5 years we have concentrated on the barbecue, lumber and flooring uses since they have the highest value and volume potential. For example mesquite chunks packaged in 5 lb plastic bags has a wholesale value to \$400 per ton and mesquite lumber has a value of \$2,000/ton. Texas A&I has been an active participant in development of the mesquite barbecue chip and chunk industry. The 5 major chunk manufacturers have accounts with major chains such as Albertsons, Safeway, Brinkman, Weber Grills and they are in all 50 states. We are working with the barbecue manufacturers and the beef industry to co-market beef and mesquite to "add flavor without calories". The industry is now only about \$3 million dollars a year, but it has only 1 % of the volume of the \$400 million dollar charcoal briquette industry (that is often made from bituminous coal and clay binders without wood). Thus there is the potential to grow into a several hundred million dollar per year industry. This industry has seen substantial growth over the last several years. Texas A&I is currently working with these barbecue members to adapt new developments in forestry manufacturing equipment to reduce the costs and increase production capacity.

Perhaps the most exciting development in the mesquite industry is the development of lumber, flooring and furniture from mesquite. Only recently have the similarities between the highly figured, orange/red colored mesquite lumber and the lumber of other exotic leguminous trees such as cocobolo, purpleheart, Brazilian rosewood and Indian rosewood become recognized. While mesquite is harder than domestic hardwoods such as oak, walnut and cherry, when it comes to three dimensional stability as measured by volumetric shrinkage, mesquite has one of the lowest values of all tropical hardwoods. Thus it has less tendency to swell and shrink with changing moisture conditions.

As a result of the ever increasing pressure to conserve habitat of on the forests of both northwestern United States and the tropic rainforests, May 1993 lumber futures increased by 100% in the last 6 months. Over the last 10 years U.S. hardwood exports increased 10 fold to be a \$500 million dollar earner of foreign exchange. Clearly the hardwood furniture industry requires no subsidies and contributes significantly to our balance of payments.

Over the last 6 years we have been developing processes that can utilize short (30 inch), small diameter (7 to 11 inch diameter) mesquite logs to manufacture high value flooring. The process we developed has been transferred to the private sector and in the last 4 months they have spent \$30,000 to upgrade the equipment developed at Texas A&I. Much more investment in equipment and market development is anticipated in the coming year.

Perhaps the most significant development in the mesquite lumber industry is the adoption of a revised Lumber Grading System (to take into account mesquites smaller boards) that is consistent with National Hardwood Lumber Association (NHLA) grading rules. This system will be considered by the NHLA at their annual convention in Dallas in October, 1993. Adoption of this system will permit the sale of lumber by FAX or phone throughout the world.

Texas A&I has also been involved in a major R&D program to develop the fruit, vegetable and forage uses of cacti. This is significant since cacti have a specialized photosynthetic pathway that is 4 times more efficient than the most efficient grasses or broadleaves in converting water to dry matter. Thus diversified agriculture systems based around cacti will be water efficient and could also help in reduction of atmospheric CO<sub>2</sub> concentrations by virtue of their great efficiency.

In the United States the model for cactus fruit production occurs in Salinas California where the D'Arrigo Bros farm about 300 acres of cactus. By using 14 inches of water from drip irrigation and by utilizing the 14 inches annual rainfall they produce about 20,000 lb of marketable fruit per acre valued at about \$10,000/acre. This fruit is sold in northeastern United States and southern Canada to those of Italian descent. Unfortunately this variety is not cold hardy enough to be used in Texas. Given annual returns of \$2/acre for cattle and about \$120/acre for sorghum, cactus could be a significant crop for Texas if cold hardy varieties could be developed.

We had significant fruit production from high producing clones, but they were killed by Christmas 1989 freeze. We have since obtained 30 more clones from high elevation sites in northern Mexico where temperatures of 10 F are routine. These new clones should fruit in 1993.

In Hispanic cultures the young, immature leaves of cactus, known as nopalitos, are consumed in fresh salads, in baked entrees, and pickled with garlic, onions and hot peppers. Texas A&I has also developed a spineless, highly prolific variety of cactus, known as Texas A&I 1308, in which the leaves can be eaten directly. From an initial release of only 700 plants in December 1989, over 30 farmers are now multiplying this variety for commercial production. Many of these are small farmers in isolated rural areas who supplement their income with sale of nopalitos. The major produce buyer in Texas (HEB) has agreed to provide a fixed price purchase contract for about \$0.55/lb that would provide gross returns to farmers of several thousand dollars per acre. This will pave the way for large scale farming of nopalitos.

A major marketing tool in the sale of cactus leaves is the fact that it apparently contains a mild anti-diabetic principle that lowers levels of blood glucose, insulin and triglycerides. Clinical trials conducted in research hospitals in Mexico City have ascribed part of this effect to fiber and part to an as yet unidentified principle.

Since the late 1800's many ranchers have continued to rely on burning the spines off cactus for cattle feed during times of drought. This process is becoming more sophisticated with "least cost rations" being developed for supplementation to balance minerals, protein and energy requirements. One rancher in Cotulla, Texas has planted over 300 acres of native spiny cactus in rows for cattle feed.

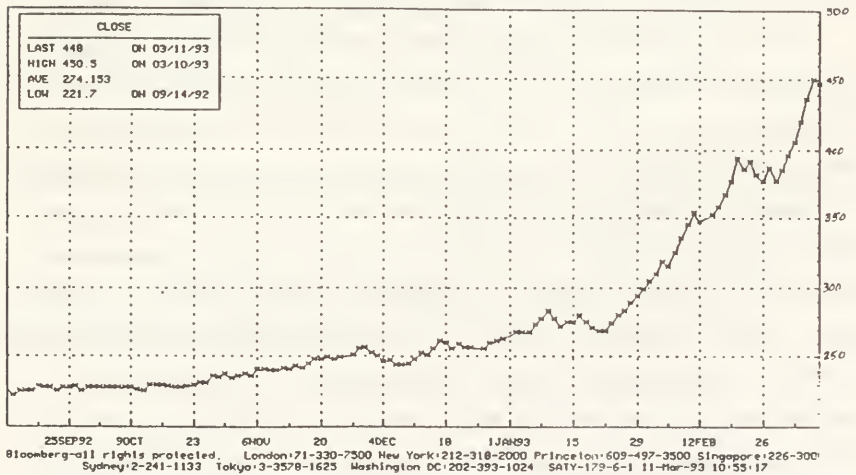
The Texas A&I program is assisting with all aspects of cactus development for arid lands including; development of more cold hardy fruit varieties, registration of pesticides for use in farming and marketing. Every year Texas A&I co-sponsors an international conference on development of cactus. This years conference will have the food editor of Southern Living Magazine and the Food and Wine Critic of the San Antonio Express newspaper to participate in the conference and promote the use of cactus as a human food.

After 14 years of R&D at Texas A&I University, private industry is also beginning substantial investment in a rapid growing nitrogen fixing tree or shrub, Leucaena leucocephala, that is useful for cattle feed. This shrub has been planted widely in the tropics for firewood and forage, but never grown commercially in the United States. Leucaena has high protein leaves (about 24 % protein) and has grown 12 ft in 5 months in southern Texas. Leucaena shows particular promise for the cattle industry in Texas, since it is 100 % resistant to the disease (cotton root rot) that prevents alfalfa from being commercially grown in most of Texas. However Leucaena has also been successfully grown in Florida, Arizona and California and has potential throughout southeastern United States.



Mr. Edwin Singer, a cattleman with a background in the petroleum industry has become very interested in developing leucaena as new high protein feed for the livestock industry in Texas. In 1992 he planted 1.2 million seedlings on a pivot irrigated farm south of San Antonio and will plant 1 million seedlings per year until 1,000 acres have been planted. Mr. Singer has also purchased a self propelled forage harvester to harvest the crop and has retained an agriculture engineering firm to develop passive geothermal techniques to dry and pelletize this crop for range cubes. By the end of 1993, Mr. Singer and associated will have invested nearly half a million dollars in this project.

In summary, the applied R&D at Texas A&I University to diversify American agriculture has attracted very significant investment and participation from the private sector. The industries in each of the three areas of R&D i.e. cactus, leucaena and mesquite areas of R&D are experiencing 20 -30 % yearly growth in very low income rural areas of Texas that desperately need economic growth. These crops being developed do not require price supports. I strongly urge you to fund this R&D project that has demonstrated great capability to assist with economic growth.





## STATEMENT OF THE INTERNATIONAL DAIRY GOAT RESEARCH CENTER

The International Dairy Goat Research Center (IDGRC), established in 1983, is an operational component of the Cooperative Agricultural Research Center (CARC) at Prairie View A&M University and is administered by the Research Director. The Center was developed through grants from the Science and Education Administration, Cooperative State Research Service, United States Department of Agriculture. The primary objective of the Center is to generate and disseminate technical information concerning herd management to dairy goat owners. The Center's major research activities are supported by Evans-Allen and special grant funds, while smaller scale special projects are funded by public and private sources.

### STATE, NATIONAL AND INTERNATIONAL BENEFITS TO ECONOMIC DIVERSITY

The International Dairy Goat Research Center conducts research in response to: 1) the identified needs of goat producers; 2) information voids on alternative solutions to critical issues of dairy goat husbandry; and 3) needs for hands-on technical assistance to members of the industry. These activities, combined with the publication of findings in technical and professional organization publications, contribute to the improved economic status of Texas goat farmers/ranchers, adds to the revitalization of the agricultural industry, and supports similar developmental and enhancement activities for the national and international community. Each year the Center conducts a field day for local and area goat producers and participates in the 4-H Kid Give-Away program for local youth.

Although the Center's primary objectives continue to place research emphasis on the nutrition, reproduction, and health of dairy goats, in 1988 the focus expanded to include a leadership role in mapping a strategy to develop a cashmere-producing industry in Texas and the nation. Most recently, a focus on meat goats as a research thrust has been added.

While responding to the research needs and demands of goat owners in Texas and in neighboring states, the IDGRC, in collaboration with the Institute for International Agribusiness Studies at Prairie View A&M University, serves as a U.S. counterpart in start-up and on-going research in Lesser Developed Countries where goats are utilized as the primary research model. The IDGRC is now in the role of pioneer and is being identified as a model facility for international goat management capability and research.

Collaborative activities have been initiated with several Universities to include the following:

- 1) National Autonomous University of Mexico in Mexico City to engage in information exchange on goat production; identification and exchange of genotypes of goats; research and development concerning production of goat meat, milk, and cashmere fiber and skins; scholarly exchange; and joint scientific conferences every five years beginning in 1991 in Mexico.
- 2) University of Nueva Leon, Monterrey, Mexico to promote a collaborative research and training relationship between the two institutions to include scientist and student exchange.
- 3) Memorandum of Understanding between the People's Republic of China and IDGRC for joint agricultural programs; scientific and scholarly exchanges on goat production and reproduction; identification and promotion of goat genotypes throughout the world; and research and development of multi-purpose goats for producing fiber, meat, milk and skins; and technical training.
- 4) Additional benefactors of research activities include: Workshops and/or seminars in China, Brazil, Guatemala, the Dominican Republic, St. Vincent, Korea, Panama, El Salvador, Jamaica, Barbados, Mexico, Egypt and Malaysia. Specific training has been provided for professionals from Barbados, Jamaica, Egypt, Costa Rica and Honduras on dairy goat technology.

## RESEARCH ACTIVITIES AND FUNDING

Special funding for the International Dairy Goat Research Center from USDA began in FY '86. The research areas supported by these funds since 1985 include:

- FY '86 Chemical & Biological Characteristics of Goat Milk and Cheddar Cheese  
Principal Investigator: Young Park  
Funding: \$90,060
- FY '87 The Use of Gene Transfer to Improve Caprine Genetics  
Principal Investigator: Louis Nuti  
Funding: \$90,060
- FY '88 Nutritional Evaluation of Alternative Foodstuff for Dairy Goats  
Principal Investigator: Nelson Escobar  
Funding: \$90,060
- FY '89 Establishing a Breed of Cashmere Goats  
Principal Investigator: Thian H. Teh  
Funding: \$90,060
- FY '90 Evaluation of Goat Conceptus and Pregnancy Specific Endometrial Proteins  
Principal Investigator: Gary Newton  
Funding: \$70,152
- FY '91 Isolation and Characterization of Major Cell Wall Proteins of C. Pseudotuberculosis  
Principal Investigator: Cleantis Braithwaite  
Funding: \$71,100
- FY '92 Changes in Vaginal Mucus Traits in Goats  
Principal Investigator: Louis Nuti  
Funding: \$70,041
- FY '93 The Use of Genetic Evaluation Procedures for Selection in Goats  
Principal Investigators: Jackson Dzakuma & Eric Risch  
Funding Pending: \$70,992

## OUTSTANDING RESEARCH

The following research activities have ensued as components of the aforementioned research thrusts.

1. Role of Proteins in Caprine Conceptus
2. Mobility, Morphology and Quality of Caprine Spermatozoa
3. Immunoglobulins in Caprine Colostrum
4. Efficacy of Vitamin A in Goat Kids
5. Quantity and Quality of Cashmere from F1 Offsprings
6. Physiology of Cashmere Production
7. Effects of Colostrum Quality and Sources on Survival of Neo-natal Goat Kids
8. Protein Requirement of Growth Performance of Growing Goats Phosphorus Requirement on Bone Matrix and Integrity of Growing Goats
9. Nutritional Evaluation of Alternative Feed-stuffs for Dairy Goats
10. Physiological Evaluation of Diarrhea in Dairy Goat Kids, Prevention and Treatment of Diarrheic Kids

11. Caprine Arthritis Encephalitis - Determination of non-medicinal Method of Interrupting the Dam/daughter Transmission of the CAEV
12. Comparative Anthelmintic Study of Dairy Goats
13. Study of Factors Affecting Post-thaw Viability of Goat Embryos
14. Determination of Time of Preovulatory Lutenizing Hormone Surge using Prostaglandin Hormones for Improving Artificial Insemination and Induced Parturition of Dairy Goats
15. Preliminary Study with In-vitro Fertilization of Follicular Stage Goat Oocytes
16. Effects of Day of Pregnancy on Proteins Secreted by the Peri-implantation Caprine Conceptuses and Maternal Endometrium
17. Induction of Estrus with Cloprostenol and Morgestomet in Cycling and Noncycling Dairy Goats: Determination of the Time of the Preovulatory LH Surge and its Relationship to Fertility

#### NON-FEDERAL FUNDING SUPPORT

The International Dairy Goat Research Center has attained non-federal funding support from the following entities:

1. Texas Agricultural Diversification Program in cooperation with the Texas Dairy Goat Producers Association of Sanger for:
  - a) the promotion of a comprehensive bilingual marketing package of written and video materials to inform producers and educate consumers on the variety of products from goat cheese, befir, chevron or cabrito, leather, blood serum for medical tests to milk for infants with dairy-sensitive diets - \$10,000.
  - b) the establishment of a model specialty fruit and vegetable diversification farm for business assistance and training in the upper costal counties region for new and expanding farm and agribusiness operations - \$12,000.
  - c) the development of a cashmere industry in Texas through documentation of appropriate production techniques and genetic resources to cross with existing Spanish goat populations in cooperation with the Texas Agricultural Experiment Station in San Angelo - \$15,000.
2. The San Antonio Livestock Exposition, Inc. provides support to establish an Endowment for Research Fellowships in

Caprine Research - Funding: \$100,000. The Texas A&M University System provided matching support for the fund.

---

## STATEMENT OF THE NATIONAL INSTITUTE FOR LIVESTOCK AND DAIRY POLICY

The major objective of this project (NILDP) is to evaluate, upon the request of the House and Senate Agriculture Committees, the economic impacts of proposed changes in farm and macroeconomic policy on livestock and dairy farms in major production regions of the United States. This CSRS appropriation (\$525,000 FY 1993) is shared with Cornell University.

The role of the Agricultural and Food Policy Center (AFPC) at Texas A&M is to conduct economic analyses of proposed farm program changes, including agriculture sector and farm level impacts. For some livestock commodities such as sheep and goats, AFPC is the only university that has this modeling capability. Because of the complexity of dairy policy, including its federal milk marketing order and purchase program provisions, dairy subsector models must be developed and maintained separate from broader agriculture sector models.

The regionally dispersed nature of milk production has resulted in the development of data to analyze 20 representative dairy farms, with the cooperation of producer panels in the major dairy production regions (Figure 1). These farms are utilized to evaluate the relatively unique regional impacts of dairy policy changes. Because of the interest and controversy surrounding the BST technology in dairy, considerable research effort has been expended at both AFPC and Cornell on the impacts of technological change in dairying.

A unique dimension of the NILDP project is an outreach component designed to explain to congressional staff, dairy farmers, cooperative staff, and the general public how complex dairy programs operate. Proposals for changes in dairy policy are also explored. To do this, AFPC participates, under the leadership of Cornell University, in the development of a series of dairy policy leaflets utilized throughout the U.S. dairy industry as the single most important source of dairy policy education materials. Dairy economists from the University of Wisconsin, Clemson University, Michigan State University, Pennsylvania State University, and the University of Missouri also participate in this project dimension.

The complexity of dairy policy has also led to extensive work with congressional staff located in dairy states. In particular, prior to the 1990 farm bill development, a series of five meetings were held, involving up to 30 staffers in each meeting, to discuss the nature of current dairy policy and the consequences of changes in policy. During 1991, AFPC was requested by the House and Senate Agriculture Committees to evaluate more than a dozen dairy supply management policy options. These quick response analyses were used by Congress to make informed decisions on dairy policy.

The work of NILDP is by no means limited to dairy. AFPC has primary responsibility for analyses of the impacts of changes in crop policy on the livestock sector. For these purposes, AFPC maintains data sets for eight representative hog farms and seven representative ranches that allow analysis of farm level impacts for policy changes on hogs, beef, and sheep. While our appropriations are for the purpose of analyzing farm program changes, AFPC has completed three analyses of the impacts of increasing grazing fees on public lands.



Continuing funding for this project supports the maintenance of the data to analyze 20 dairy farms, eight hog farms, and seven ranches, which must be updated every three years; the development or replacement of new farms; and the continuing analyses of policy options.

**Figure 1. Panel Livestock & Dairy Farms Developed by AFPC**



#### STATEMENT IN SUPPORT OF THE REGIONAL IMPACTS OF FARM PROGRAMS ON CROP FARMS

The major objective of this project is to evaluate, upon request of the House and Senate Agriculture Committees, the farm level impacts of proposed changes in farm policy and macroeconomic policy on crop farms in major production regions of the United States. This CSRS appropriation (\$348,000 FY 1993) is shared with FAPRI at the University of Missouri. The role of FAPRI is to work with the Agricultural and Food Policy Center (AFPC) at Texas A&M University to develop an annual 10-year baseline of future farm prices, interest rates, and government expenditures, assuming continuation of the current farm policy. This baseline analysis serves as a basis for comparison of alternative farm policies.

AFPC utilizes this FAPRI baseline in combination with a data set for 33 representative crop farms which it developed and maintains for major production areas throughout the United States (Figure 1). The representative farms are developed with the cooperation of a panel of farmers in each location. Data collected from these farms provide input into an AFPC simulation model, the output of which is an income statement, cash flow statement, balance sheet, and economic viability measures. Before a representative farm is utilized for analytical purposes, the producer panel must verify the model's ability to simulate the farm they helped AFPC faculty develop.

The simulation model has been developed, peer-reviewed, and continuously improved over a period of 12 years. Peer-review research publications developed as a result of the model include 39 refereed journal articles and more than 100 other publications. The main AFPC output for communicating with the Congress are a series of briefing and working papers that are produced on a timely basis as requested by the Agriculture Committees. Results are also communicated in Committee hearings, group

congressional staff briefings, and discussions with individual congressional staff members. Staff contact, in group briefings and individually, plays a major education function in light of frequent staff turnover.

Since the project began four years ago, AFPC faculty have participated in 18 formal hearings, 30 group staff briefings, and 150 individual staff briefings. AFPC faculty are regularly called on by professional and farm organizations to present their research results. Over the past four years, AFPC faculty have addressed 180 predominantly academic, agribusiness, and farm audiences bringing them in contact with an estimated 18,000 individuals. At these meetings, media interviews result in the distribution of our research results to a much larger audience.

For the 1990 Food, Agriculture, Conservation, and Trade Act, AFPC faculty served as authors and editors with university faculty throughout the United States for a series of leaflets explaining the consequences of farm program options for the major farm bill titles. These leaflets served as the basis for Extension Service policy education programs throughout the United States.

Continuing funding for this project supports the maintenance of the data necessary to analyze policy impacts on 33 crop farms, which must be updated every three years; the development or replacement of new farms; and the continuing analyses of policy options.

**Figure 1. Panel Crop Farms Developed by AFPC**



#### STATEMENT OF THE WOOL AND MOHAIR LABORATORY

The Wool and Mohair Laboratory serves as a national research facility for the sheep and goat industry. With the closure of the USDA/Agricultural Research Service wool research program in Albany, California in the mid 1980's, equipment and other support units were transferred to the Texas Agricultural Experiment Station to assist in the establishment of the new research facility. Funds from the industry and the State of Texas were used to construct a building to house this research project. The Laboratory has been in operation

for ten years and conducts research of importance to the industry throughout the U. S. This national role clearly justifies federal investment in this research program.

The principal objectives of the research program are to: (1) Develop and evaluate measurement techniques for rapid, objective evaluation of wool, mohair, cashmere and other animal fibers and (2) Use objective measurements to increase fiber production, quality and income to producers through improved animal selection, nutrition, management and marketing efficiency. With the increasing emphasis on the production and utilization of natural fibers for clothing, related household and industrial products, this research is critical to maintaining a competitive position for the sheep and goat industry. New technology is needed to develop production systems and advanced marketing techniques that will out pace foreign competitors. This fiber research is a critical part of a continuum of technology development that exploits the inherent advantages of these natural fibers. The sheep and goat industry is of great economic importance to many western states and is highly dependent on the infusion of technologies which will make their product more attractive in the market place.

This research program represents a broadly based partnership involving federal, state and industrial collaborators. Funding through this program is shared with State Agricultural Experiment Stations in Montana and Wyoming. Joint research projects have been conducted with four USDA/Agricultural Research Service locations. Other collaborative projects have been undertaken with public and industrial scientists in New Mexico, California, Colorado, Idaho, Nebraska, Oklahoma and Wisconsin. In these relationships, the Wool and Mohair Laboratory serves as a valuable resource in evaluating and characterizing fiber samples from experiments conducted in other laboratories. An inventory of state-of-the-art equipment has been maintained in order to use the most modern technology available for objective measurements. The transfer of the technology from this research has been rapid and effective as evidenced by the heavy industrial involvement.

It is requested that \$250,000 be appropriated for FY 1994 in support of the Wool and Mohair Laboratory at Texas A&M University.

## TEXAS TECH UNIVERSITY

STATEMENT OF DR. SAM E. CURL, DEAN, COLLEGE OF AGRICULTURAL  
SCIENCES AND NATURAL RESOURCES

## SUMMARY

**PHASE II CONSTRUCTION FUNDS FOR THE USDA/ARS PLANT STRESS AND WATER CONSERVATION RESEARCH LABORATORY AUTHORIZED IN 1988 BY P.L. 100-339 AND A REQUEST FOR ENHANCED PROGRAM SUPPORT.** The USDA/ARS PROGRAM AND LABORATORY LOCATED AT LUBBOCK, TEXAS, CONDUCTS RESEARCH IN COOPERATION WITH TEXAS TECH UNIVERSITY AND THE TEXAS AGRICULTURAL EXPERIMENT STATION.

**SPECIFIC ACTION REQUESTED OF THE COMMITTEE:** It is requested that Congress appropriate \$8.6M to complement the \$1.3M and \$1.1M appropriated for FY 92 and FY 93, respectively, for construction of Phase II of the Plant Stress and Water Conservation Research Laboratory authorized by the 100TH CONGRESS through PUBLIC LAW 100-339. Construction funds of \$500,000 were appropriated for Phase I of Laboratory construction (the greenhouse-headhouse has been constructed). Total construction costs (Phases I and II) will amount to \$11.5M. Architectural and engineering planning for Phase II (main laboratory) is at 95% completion. The building will be constructed on the Texas Tech University campus on a 50 acre tract of land leased to USDA/ARS by the Texas Tech University Board of Regents.

A request for a \$300,000 increase in the Plant Stress and Water Conservation Research Program appropriation is also made to increase funding of the research program and for operation of the new greenhouse. The research effort will continue to focus on understanding the genetic control of plant mechanisms which facilitate drought and heat tolerance in crop plants.

**JUSTIFICATION:** The action of the federal government in 1988 through PUBLIC LAW 100-339 authorizing a plant stress and water conservation research laboratory and program at Lubbock, Texas was very timely and will have a substantial impact on food production and environmental quality for decades to come. The Greenhouse Effect resulting from increased atmospheric carbon dioxide, Global Warming Induced climatic changes, and the extensive drought during the summer of 1988 and during the past five years in California are ready examples of the fragility of our managed and natural ecosystems, and the potential for reduction in food and fiber quantity from even modest changes in weather patterns.

The formal plant stress and water conservation program was initiated in 1979 after 20 years of feasibility studies and planning by agencies of the federal government. The federal government through USDA/ARS, and the State of Texas through Texas Tech University and the Texas Agricultural Experiment Station, have put in place over the last 13 years a comprehensive-integrated program in which 17 senior scientists are today working to develop improved crop plants and planting systems that will provide for economically optimal crop production under variable, extreme environmental conditions. Scientists with expertise in the broad areas of genetics, breeding and molecular biology; biochemistry and physiology; and climatology, soil science and systems research have research programs poised for the challenges of the predicted climatic changes forecast within the next several decades. This program will be greatly enhanced, and its potential fulfilled, with the construction of a laboratory on the Texas Tech campus in conjunction with a broad array of established basic sciences. Additional program dollars will fill existing gaps in the continuum of technology transfer from laboratory molecular technologies to field applications of genetically modified plants exhibiting improved stress tolerance.

## INTRODUCTION

Mr. Chairman, I greatly appreciate the opportunity to appear before the Committee today to request that Congress appropriate \$8.6M for construction and design review of Phase II of the USDA/ARS Plant Stress and Water Conservation Research Laboratory at Lubbock, Texas authorized by the 100TH CONGRESS through PUBLIC LAW 100-339. We are also requesting that Congress appropriate \$300,000 to enhance the research program and for operation of the new greenhouse. The research effort will continue to focus on understanding the genetic control of plant mechanisms which facilitate drought and heat tolerance in crop plants. This vital research is encompassed in the comprehensive nationwide research mission of the U. S. Department of Agriculture/Agricultural Research Service, and the research program implements the recommendations of the Plant Stress and Soil Water Conservation feasibility study prepared by the USDA/ARS.

The action of the Federal Government in 1988 through PUBLIC LAW 100-339 authorizing a plant stress and water conservation research laboratory and program at Lubbock, Texas was very timely and will have a substantial impact on food production and environmental quality for decades to come. The Greenhouse Effect resulting from increased atmospheric carbon dioxide and other gases, Global Warming induced climatic changes, and the extensive drought during the summer of 1988 and during the past five years in California are ready examples of the fragility of our managed and natural ecosystems, and the potential for reduction in food and fiber quantity from even modest changes in weather patterns.



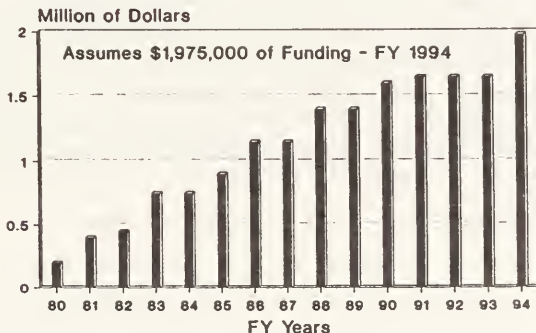
The background setting for the problem which the research program addresses is found in Senate Document 59, the feasibility study conducted by the Science and Education Administration of USDA in 1977, and the statement of Texas Tech University submitted for the record before this committee on March 26, 1979. We will not repeat this information, as we believe the record is replete with scientific and economic documentation prepared by a select committee which describes the conditions of the region and the research required to seek viable solutions to a complex set of critical problems confronting the areas of agriculture, natural resource conservation and environmental protection. The need for a comprehensive, multidisciplinary, long-term basic science research program is obvious. Texas Tech University has taken the lead in the development of a cooperative research program with the USDA/ARS, the Texas Agricultural Experiment Station, colleges, universities, and federal laboratories throughout the region, agricultural producers, the agribusiness industry, and private research organizations.

#### BACKGROUND

The key planning events involving Texas Tech University which have taken place in conjunction with the development of the research program and laboratory to date are as follows:

- 1975-1976:** Preliminary discussions with officials of the U. S. Department of Agriculture and members of the Congress.
- 1977-1978:** Congress appropriated \$100,000 for a feasibility study. The study team concluded that there was an urgent need for a plant stress and water conservation research program and that Lubbock, Texas, was the ideal location for a laboratory facility. A later decision to locate the facility on the campus of Texas Tech University, in conjunction with the College of Agricultural Sciences, finalized the first major step in the development of the program.
- 1978-1979:** Congress appropriated \$800,000 for the preparation of a research program plan and architectural and engineering plans for the appropriate laboratory in which to carry out the proposed research. The Science and Education Administration in August, 1979, transferred a USDA/ARS scientist (plant physiologist) to Lubbock, Texas to serve as a cooperative scientist working with Texas Tech and Texas Agricultural Experiment Station scientists on environmental stress mechanisms in sorghum and cotton. Texas Tech provides office and laboratory space and use of the library, computer, and other University facilities as well as extending full faculty privileges to the USDA/ARS scientists.
- 1980-1981:** Congress appropriated \$200,000 to initiate basic research on the problem.
- 1983-1984:** Congress appropriated funds for completion of the architectural and engineering plans.
- 1988-1989:** Congress passed and the President signed into law PUBLIC LAW 100-339 which authorizes construction of the Plant Stress and Water Conservation Research Laboratory on the campus of Texas Tech University.
- 1989-1990:** Congress appropriated \$500,000 to construct Phase I of the Plant Stress and Water Conservation Research Laboratory.
- 1990-1991:** Congress appropriated \$600,000 to complete the architectural and engineering plans for Phase II (the main laboratory) and \$75,000 to enhance the ongoing cooperative research program, bringing total research program funding to \$1,675,000.
- 1991-1992:** Congress appropriated \$1,300,000 for initiation of construction of Phase II (the main laboratory).
- 1992-1993:** Congress appropriated \$1,100,000 for construction of Phase II (the main laboratory).

### Funding for the USDA/ARS & TTU Plant Stress and Water Conservation Program





## RESEARCH MISSION AND ACTIVITY TO DATE

The mission of the Plant Stress and Water Conservation Research Program is to develop a detailed understanding of how plants survive and grow when exposed to extreme temperatures and limited moisture. This knowledge is used to develop improved varieties and crop production systems for cotton, wheat, sorghum and forage crops that insure greater water use efficiency, improved drought tolerance and increased winter hardiness. This research is critical to the future success of the agricultural industry of the Great Plains region of the central U.S. where environmental extremes cause millions of dollars of losses in crop production each year. Reduction of these annual losses would stabilize the economy of this region while improving the ability of the American farmer to compete in domestic and export markets for agricultural commodities. The Plant Stress and Water Conservation Research Program has concentrated in three specific areas: Stress Physiology; Genetic Enhancement; and Advanced Production Systems.

Stress Physiology:

The specific objective of research in stress physiology is to identify and understand the structural and biochemical mechanisms in higher plants that could mediate the impact of environmental extremes. These studies have concentrated on the evaluation of those weed and crop species which grow in the driest deserts and coldest regions of our planet. Scientists have isolated specific morphological modifications, enzymes and proteins that drastically reduce the damage caused to plants exposed to environmental stress. Only recently have the first of the hundreds of genes available from these exotic species been fully characterized.

Genetic Enhancement:

Plant physiologists work cooperatively with molecular biologists to isolate the specific DNA sequences needed to synthesize the unique proteins and enzymes that reduce environmental stress. The plant stress DNA sequences are combined with other regions of DNA that regulate gene expression to insure that the selected stress genes are "turned on" only when the crop plants are exposed to specific environmental conditions. These carefully designed plant stress genes are then introduced into bacterial cells to generate the millions of additional copies needed for incorporation into a crop plant.

Cell biologists have developed several innovative techniques to introduce these genes into individual cells or intact plants of cotton and alfalfa. Only in a small proportion of the cells exposed to the plant stress genes will the introduced DNA be incorporated into the original DNA of the crop species resulting in a transformed plant. Scientists worldwide are still working on similar techniques to allow transformation in wheat and sorghum.

Plant breeders and molecular biologists have only recently begun to select among thousands of transgenic plants for appropriate expression of the introduced genes. Only after extensive and carefully controlled evaluation under laboratory conditions are transformed plants evaluated under field conditions.

Agronomists are evaluating the impact of row orientation, row spacing/plant populations, nitrogen fertilization and water management to optimize economic yields under both dryland and irrigated conditions. These cultural practices have a drastic impact on the efficiency of critical physiological processes such as photosynthesis, nitrogen metabolism and carbon metabolism as well as soil water and crop canopy temperature relationships. Optimization of the soils and crop production environment is essential to ensuring economic crop production.

## POTENTIAL ECONOMIC IMPACT

Insuring that the U.S. farmer is economically competitive in both domestic and export markets is essential to the future of American agriculture. Use of genetically enhanced varieties and advanced production systems to improve the efficiency of producing major crop commodities has the potential to revolutionize American agriculture. These technologies are beginning to be applied in specific production regions worldwide to improve the efficiency and stability of crop production. Any country or geographic region not participating fully in this revolution will become increasingly less efficient and less competitive in both domestic and international agricultural markets. If the agricultural industry of the Great Plains is to survive in this highly competitive global environment, it is essential that the U.S. lead and not follow in the application of leading edge science to this industry. The successful efforts of the Plant Stress and Water Conservation Laboratory will allow future generations of American farmers to produce crops for food during extremely cold winters or hot, dry summers and in direct competition for international crop commodity markets.

## STATEMENT OF HON. STROM THURMOND, U.S. SENATOR FROM SOUTH CAROLINA

MR. CHAIRMAN:

I would like to thank you and the other members of the Senate Appropriations Subcommittee on Agriculture, Rural Development and Related Agencies for the opportunity to submit this testimony.

Mr. Chairman, we are all aware that money for federal projects has decreased over the last several years, and it is evident that this trend will continue for fiscal year 1994. Therefore, in allocating funds we must seek to fund those areas which will yield the greatest return. According to a study by a Yale economist, every \$1,000 invested for agricultural research yields \$12,000 in returns. Agricultural research has also consistently provided information which has helped our farmers become more competitive and productive than any other farmers in the world. I am particularly interested in a number of very important programs and wish to emphasize the need for their funding. Following is a table which summarizes funding requests for fiscal year 1994 and a brief outline of each program:

	1993 Funding	1994 Request
<u>PREVIOUSLY FUNDED PROGRAMS</u>		
Alternative Cropping Systems:	\$278,000	\$280,000
Peach Tree Short Life:	\$192,000	\$200,000
Pest Control Alternatives:	\$125,000	\$250,000

ALTERNATIVE CROPPING SYSTEMS

Mr. Chairman, the first of these high-priority programs is the "Agricultural Adjustment in the Southeast through Alternative Cropping Systems Program," being conducted jointly by Clemson University, the University of Georgia, and North Carolina State University.

For the past nine years, these three universities have been conducting an innovative research program to improve the marketing and production practices for farmers interested in growing vegetables. This program is aimed at increasing and stabilizing farm income in the Southeast through the development of alternative crops suitable to that area of the country. The Agricultural Economics and Horticulture departments of the universities involved work together to define "market windows" for certain crops. These

"windows" identify optimum times to market produce which increases revenue to the farmers while providing consumers with healthy commodities. Accordingly, I request that the Subcommittee appropriate \$280,000 to continue this important program.

#### PEACH TREE SHORT LIFE

The "Peach Tree Short Life Research Program" is another example of our use of science to improve agriculture. This program is responsible for investigating the causes of premature death of young peach trees. This short life is caused by damage primarily inflicted on the root system by various nematodes. Since DBCP was banned in 1979 as a soil fumigant, no effective replacement has been developed. This research has identified production practices which lessen the incidence of the harmful nematode, but further work is needed. If funding is continued, future research will concentrate on identifying the genes in the rootstock which are resistant to nematode infestation and transferring these genes to a commonly used rootstock in the peach industry. Mr. Chairman, I respectfully request \$200,000 to continue this research project.

#### PEST CONTROL ALTERNATIVES FOR FRUIT AND VEGETABLE PRODUCTION

Recently, the agricultural industry has received much criticism about the misuse of chemicals and pesticides which aid the farmer in fighting insects and weeds. Several years ago a number of fruit and vegetable farmers in South Carolina contacted the professors at Clemson University requesting this research program to aid in reducing the use of chemicals to control weeds and other pests. The farmers support for this program is evidence of their genuine concern about providing the consumer with a quality product which is safe to eat. Clemson University received \$125,000 for fiscal year 1992 and is requesting \$250,000 for fiscal year 1993.

Mr. Chairman, I thank you for allowing me the opportunity to submit this testimony. I hope that it will be beneficial to you and the other committee members in your efforts to prepare the fiscal year 1994 Agriculture, Rural Development and Related Agencies Appropriations Bill.

## TUFTS UNIVERSITY

STATEMENT OF J. LARRY BROWN, DIRECTOR, CENTER ON  
HUNGER, POVERTY AND NUTRITION POLICY

Mr. Chairman and Members of the Subcommittee:

Thank you for giving me the opportunity to submit written testimony for the record. While I am indeed honored to provide testimony, I am saddened that the originator of this project, Dr. Jean Mayer, cannot be here today. As you know, just a few months ago this distinguished President of Tufts University passed away. Many of you on this Committee and many others in Congress knew Dr. Mayer and, like all of us, were deeply affected by the purpose and passion of his work. No one in America has given more to the field of nutrition and been more dedicated to doing something about hunger than Dr. Mayer. All of us will miss him, but I am greatly pleased that President John DiBiaggio, his successor at Tufts University, is highly committed to fulfilling the goal of a nation free from hunger.

The Center for Hunger, Poverty and Nutrition Policy was Dr. Mayer's most recent and major initiative. It was his vision to take Tufts' extraordinary resources in the area of nutrition and to marshal them to wage a truly effective war on hunger in this country. He was very proud of the fact that when the Department of Agriculture conducted a feasibility study to examine the need for a facility to house this Center, the result was a very strong USDA recommendation. As you know, that recommendation was supported by this Subcommittee and by Congress with small appropriations in each of the last two years, principally to perform the planning work. I am here today to ask this Subcommittee to approve the nearly \$12 million to complete this effort.

I might add that we are at a stage where such an effort can put people to work in a relatively short period of time and thus enhance our economy.

As Dr. Mayer indicated in the past, the overall cost of this project beyond the federal share is in excess of \$30 million, and Tufts University is fully committed to staffing and operating it. For the last several years we have worked very closely with the staff of the Department of Agriculture and together we have shaped, modified and improved the concept of this Center. Today we believe that our plan and efforts can truly make a difference, and that this effort is necessary now more than ever.

Recently, the Center on Hunger, Poverty and Nutrition Policy completed an analysis of child poverty in America during the last 30 years. That study, as well as others, has produced some alarming results that force us, I believe, to rededicate our efforts to finally solving this problem. Our study concluded that in the last two decades the number of American children in poverty has increased by 37%, adding nearly four million children to the poverty rolls. Unless we move forward in a thoughtful and deliberate manner, by the year 2010 America will be a Nation where more than 20 million children are poor.

The Center for Hunger, Poverty and Nutrition Policy alone cannot solve the problems of hunger, but I am convinced, as was Dr. Mayer and the staff of the Department of Agriculture, that we can make a real difference. As has been indicated to this Subcommittee in the past, our new Center can effectively link research and sound educational programs - a combination necessary to help eliminate hunger. Our Center will bring together the faculty and staff of the School of Nutrition, the Human Nutrition Research Center on Aging, the scientific resources and medical resources of the Tufts Medical School and the New England Medical Center. And through unique collaboration

with Congress, USDA, and other university research and policy centers, it can play a leading role in developing plans to battle hunger in America.

Finally, I am pleased that this Center facility received the strong support of our new Secretary of Agriculture when he was in Congress. Mr. Espy urged Secretary Madigan in the Bush Administration to support it, and I am happy that as the new Secretary, Mr. Espy, now heads the Department which recommended that Congress support this Center.

Dr. Mayer was fond of noting that each year Congress spends approximately \$35 billion on food and nutrition programs, but has little information on the effectiveness of this investment. His vision for the Center on Hunger, Poverty and Nutrition Policy was to help Congress and USDA spend those dollars more efficiently and effectively. We may not have Dr. Mayer's presence, but we have the benefit of his vision, his inspiration and his first hand work on the project. I am confident that those efforts can bear fruit.

We are grateful for your support in the past and with your continued support, we look forward to completing this project in the near future.

Thank you.

---

#### STATEMENT OF IRWIN H. ROSENBERG, DIRECTOR, HUMAN NUTRITION RESEARCH CENTER ON AGING

Mr. Chairman, Members of the Subcommittee, I am pleased to have this opportunity to present this statement for inclusion in the official record on behalf of Tufts University and its Human Nutrition Research Center on Aging. As you know, the USDA/Tufts University Center received its first appropriation from this Subcommittee in 1978 for construction of the Center, and has subsequently received federal funding provided by this Subcommittee for its operations and research activities. We are most grateful to this committee for the support of our Center and its unique dedication to research on nutrition and aging. The foresight in establishing this Center with its mission to conduct fundamental research on the role of nutrients and diet in the aging process and to provide a sound scientific basis for meeting nutritional needs and preventing disease and disability in our growing elderly population was a powerful investment in the future health of our population. From one American in twenty-five being over age sixty-five at the beginning of this century, we have increased to one in eight Americans over sixty-five, by early in the next century one in five Americans will be over the age of sixty-five. Persons over age eighty-five are the fastest growing segment of our population. It is increasingly essential that we understand the needs of this aging population so that we can maintain the greatest possible degree of health, independence, and quality of life. In this year, I needn't remind the committee how important it is to understand the way in which diet and lifestyle can prevent disability and disease and thus contribute to our ability to maintain health while controlling the cost of health care. We are proud of our accomplishments and contributions and I will enumerate several in these few minutes



available now. I will try to make you aware of our need to move our program forward at this critical time in the nations' history.

- Our Center has been in the forefront of research on the nutritional needs of women after menopause, with particular attention to the prevention of age-related loss of bone density leading to osteoporosis and fracture. This condition seriously affects more than 1.3 million people and results in an expenditure of over \$10 billion a year in health care costs. HNRC scientists have targeted specific periods after menopause in which increased calcium intake can have a major impact on this prevention of bone loss and have shown how the special vitamin D requirements of this population must be met in any program of prevention. We are learning that dietary prevention of osteoporosis and bone loss may require different programs in different racial groups. We are extending our studies of prevention to include evaluation of the interaction of diet and exercise throughout adult life.
- The most commonly performed operation in our elderly population, at a cost approaching \$4 billion a year, is extraction of cataract. Cataract lenses impair the vision and quality of life in nearly half of older Americans by the age of 75. Our research, confirmed now by other laboratories, has shown that dietary intake patterns may be critical in the slowing or preventing of the development of cataract by providing the antioxidant nutrients, beta-carotene, vitamin E, and vitamin C. These nutrients defend against the age-related damage to the lens proteins of the eye. These observations have come from the combination of basic laboratory research and studies in older Americans that are a special capability of our Center. National intervention trials are underway to determine the best means of preventing or retarding the onset of cataract. Our progress in these activities could save billions of dollars and improve the lives of our growing elderly population.
- These same antioxidant nutrients in our diet, best provided by an adequate intake of our rich harvest of fruits and vegetables, may have other substantial beneficial effects on health promotion. Recent work leads to the conclusion that dietary prevention of heart disease (the number one cause of mortality in this country at a cost of \$65 billion for medical expenses and disability) may be influenced not only by positive choices with respect to dietary fat but also with respect to the nutrients in our diet. These protective nutrients are included in vegetables and grains and vegetable oils, that can counteract the oxidative damage that leads to atherosclerosis. In recent exciting new observations, our laboratory and others has

identified new risk factors for heart disease that can be identified in the blood, but, more importantly, modified by our intake in vitamins of foods rich in vitamin B6, vitamin B12 and folate. Thus, our research on the nutritional requirements for a population growing older has the possibility of providing dietary guidance that can retard the onset of our number one killer disease. Interestingly, some of these same nutrients may also be important in counteracting the earliest changes in tissues that may ultimately lead to cancer.

- One of the dramatic changes in our bodies as we grow older is the decrease in lean or muscle mass and the increase in fat mass. We are using state-of-the-art techniques of body composition to understand the health implications of these changes in body composition and distribution and have already demonstrated that a balanced program of exercise, including strength training as well as aerobic forms of exercise, can maintain health and strength and a healthier body composition even in people over ninety years old. The interaction of appropriately designed exercise and diet may be the two most important means of health promotion, disease prevention, and cost savings as we move into the next phase of our approach to health care reform.
- Our immune system helps to protect us against not only infection but also malignancy. We are learning that declining immune function with age is not an inevitable consequence of aging and we can modulate this system with proper dietary intake of key nutrients including vitamin B6, vitamin E, and zinc. The possible health benefits of appropriate maintenance of immune defenses could be very substantial.
- We have exciting and important preliminary information that links diet and nutrition to some of the changes in cognitive function and memory that affects so many older Americans. There are not only direct relationships between dietary vitamins and brain function, but also the same vitamins that can protect somewhat against coronary disease may also protect against stroke and dementia-related to cerebrovascular disease. Our highest priority for program development in the last two years has been in the field of neurosciences with emphasis on nutrition, aging and brain function. We have not been able to progress as fast as desired in this critical area of health research because our budget has been flat funded for the last three years and this has resulted in some program contraction and inability to expand into this important area of opportunity.

Mr. Chairman, I deeply understand the difficult choices you and your Subcommittee face this year on spending, but the long-term savings to the federal government and the American taxpayer can be substantial as a result of this research from both health care costs reduction and improved quality of life for our nations' senior citizens. We are once again requesting an additional \$750,000 in funding in the 1994 fiscal year to permit an expansion of this research in the prevention of disability associated with loss of mental function. This could be one of our most important research investments. This would represent an increase in funding smaller than that required to keep up with inflationary costs so that we can at least approach the maintenance of a vigorous research effort in this vital area of health of our nation.

Mr. Chairman, I want once again to thank you and the committee for your support and confidence. We have every intention to merit that support in the future.

## STATEMENT OF THE UNITED STATES TELEPHONE ASSOCIATION

**SUMMARY OF REQUEST**

**PROJECT INVOLVED:** Telephone Loan Programs Administered by the Rural Electrification Administration.

**ACTIONS PROPOSED:** Subsidies to Support a Continuation in FY 1994 of not Less Than the FY 1993 Loan Levels for the REA and RTB Loan and Guarantee Programs with Funding for Adequate Staffing to Administer the Program.

**BACKGROUND**

USTA represents over 1100 local telephone companies that provide over 98 percent of the access lines in the United States. USTA members range from large publicly-held corporations to small family-owned companies and cooperatives owned by their customers. USTA presents this testimony in the interests of its members and the customers they serve.

Local telephone companies are dedicated to fulfilling two goals: serving the nation's telecommunications needs and maintaining universal service at reasonable rates. USTA members, both large and small, firmly believe that the targeted assistance offered by a strong and viable telephone loan program remains essential in order to maintain a healthy and growing rural telephone industry that contributes to the provision of universal telephone service. We appreciate the strong support this committee has provided for the telephone program since its inception in 1949 and look forward to a vigorous program for the future.

**RECOMMENDATIONS**

USTA recommends funding for the telephone loan program loan levels in fiscal year 1994 at not less than the loan levels in fiscal year 1993. In addition, we request that the REA administrative budget be set at a level that ensures the availability of adequate personnel and equipment to perform its statutory functions.

We are aware of the changes to the Rural Electrification Act of 1936 contained in the House budget reconciliation package. These provisions would: assure an adequate level of insured lending authority at five percent; provide additional insured loan funds at the government's cost of money, not to exceed seven percent; restore the proper functioning of the Rural Telephone Bank's statutory interest rate calculation and provide for adequate RTB lending authority; preserve the loan guarantee program; and make other improvements in the telephone program that will benefit rural Americans. USTA strongly supports these provisions and requests that funds be appropriated in accordance with the House package. If that restructuring of the program fails, however, we urge that subsidies to support a continuation in FY 1994 of not less than the FY 1993 loan levels be approved.

The need for funding continues to be great. At the beginning of fiscal year 1993, REA had over \$220 million in completed loan applications. As of April 1, 1993, REA had approved over \$139 million in REA and RTB loans while completed applications grew to approximately \$290 million. So with half the fiscal year still to go and loan applications still coming in, the known current demand for REA and RTB loans already more than equals the total fiscal year lending authorization. This amount of applications attests to the continuing need for the REA Telephone Program.

We understand the budget constraints Congress must face, but the Administration's fiscal year 1994 proposal for REA would threaten our ability to adequately serve the nation's telecommunications needs and to maintain universal service. The ratemaking process employed by state utility commissions reflects a company's cost of capital in the rates charged for service. Higher interest rates equal higher monthly bills -- it's that simple. Low cost REA debt helps make modernization feasible while keeping rates affordable in rural areas.

## A CHANGING INDUSTRY

The telephone industry is in the midst of one of the most dramatic changes any industry has ever undergone. Both the technological underpinnings and the regulatory atmosphere are much different than they were just a few years ago. Without system upgrades, rural areas will be left out of the emerging information revolution. This will impact not only rural Americans, but people in urban areas that need to communicate with those in rural areas.

As the need for new services evolves, rural telephone systems must have access to low cost REA financing to fund technological improvements such as:

- digital switching equipment;
- updated switch software to provide advanced services and communicate with discrete signalling networks;
- broadband fiber optic lines; and
- emergency services such as enhanced 911.

The intelligence required for many of the emerging new services resides at a high level in the national public telecommunications network. Rural telephone companies must have the advanced capability required to communicate with these intelligent network elements.

Just as technology is rapidly changing, so is the regulatory structure of telecommunications. Increasing competition is forcing a trend towards cost based pricing. Local residential customers now shoulder a greater share of telephone network expenses. Rural areas tend to face higher costs, because the customer base is smaller and distances are greater between customers. The REA telephone program targets assistance to these rural telephone customers. It keeps them on the network by allowing for reasonable phone bills and extends and expands that network in rural America to meet the future needs of these customers.

## THE REA TELEPHONE LOAN PROGRAM AIDS RURAL DEVELOPMENT

In the information age in which we live, it is essential that rural subscribers receive telecommunications services of a cost and quality equal to those of urban communities. New telecommunications services, essential for rural economic development, require infrastructure improvement through the deployment of new technology. Recognizing this, industry and government telecommunications experts alike insist there will always be a need for REA's capital, as well as its technical standards advice. Recent studies by the Aspen Institute and the Office of Technology Assessment bear out the need for modernization of the rural infrastructure and explain the significant benefits that will flow from it.

A 1990 study by MESA Consulting entitled, *"Telecommunications and Rural Economic Development"*, concluded that an advanced telecommunications



infrastructure attracts new businesses, makes existing businesses more competitive, and enhances the quality of life through provision of essential social services. The study, placed on the record by USTA in National Telecommunications and Information Administration's Infrastructure Proceeding, confirmed that modern telecommunications services are an essential part of rural America's infrastructure and yield enormous returns to the local and national economy. Telecommunications expands production - agricultural, manufacturing and services - thereby reducing the trade deficit, generating additional Federal, state and local tax revenues, and stimulates employment. Now, when rural areas require a modern telecommunications infrastructure to stimulate vital economic development, REA is needed more than ever.

Without modernization of the rural infrastructure, economic growth will suffer and jobs will be lost. Borrowers employ nearly thirty thousand rural Americans in their businesses directly and benefit hundreds of thousands indirectly. REA loans have a multiplier effect - the minimal amount of REA "seed" dollars stimulates business activity and creates jobs, thereby generating Federal, state, and local revenues.

## **REA HELPS RURAL AMERICANS**

The REA telephone program benefits America. The program is a public-private partnership in which the borrower telephone systems are the conduits for benefits from the federal government to rural telephone customers, the true beneficiaries of the REA program. The REA telephone program is totally voluntary. Companies that borrow do so to expand their customer base and modernize their network in order to improve service to their customers. The government's contribution is leveraged by the equity, technical expertise and dedication of local telephone companies and cooperatives.

In its 44 year history, the REA telephone program has never had a default. The program costs amazingly little for the benefits the nation receives. Perhaps most importantly, it is an established and effective program to modernize the rural telecommunications infrastructure so necessary if this nation is to have universal availability of advanced telecommunications service.

Let's be clear, it is not the telephone companies that will suffer from a diminished REA telephone program. Service to rural America will suffer as a result of a telecommunications infrastructure that does not keep pace with the rest of the network. The nation will suffer the consequence of lesser telecommunications service in rural areas through lost productivity, lost jobs, a loss of potential development and economic stagnation.

Higher REA telephone program interest rates will discourage investment in high cost, low density rural areas. Telephone companies, and in particular those that rely on private capital markets, must seek to maximize their return. They cannot afford to borrow money to modernize areas that will not generate enough additional revenue to repay the debt and earn a reasonable return. As evidence of this, we're presently seeing a number of companies that rely on the private capital markets divesting themselves of rural exchanges.

Therefore, it is likely that if low cost funds are unavailable through the REA telephone program, many rural customers will be unable to afford to pay the cost of information-age services. Higher costs may drive up access rates charged to long distance carriers, thereby threatening geographically averaged long distance rates - one of the key industry structures that supports universal service.

## **REA IS NEEDED MORE THAN EVER**

It has become increasingly clear that advanced telecommunications can overcome the rural disadvantages of long distance and low density and provide modern and high quality medical, business, educational, information and entertainment services to rural Americans who continue the struggle to revitalize their stagnant economies. In light of the fact that Congress, government agencies and independent studies have indicated that telecommunications enhancement is a significant part of rural economic development, affordable capital to finance technological upgrading is needed now more than ever before.

We were puzzled at an Administration budget proposal to invest funds in an "information highway" while essential REA low cost capital was proposed to be all but eliminated. Rural telephone companies provide "the last mile of line" to the rural farm, ranch, business or home, that is essential if an information highway is to reach the Americans that need it most.

The government cannot afford to eliminate the only low-cost assistance it provides to help meet rural communities' telecommunications needs. The REA telephone program is one of the few government infrastructure programs targeted to America's rural citizens. It has brought social and economic benefits to rural parts of the nation which, particularly in recent years, have suffered severe economic hardship.

## **REA STAFFING MUST BE ADEQUATE**

REA telephone program staffing levels continue at all-time low levels with only 139 employees based on an authorized staffing level of 141. In 1982, the REA telephone program had 212 employees. Only two years ago, it had 149 employees based on an authorized staffing level of 154. The Telephone Program needs an adequate level of staffing to perform critical engineering and technical standards, financial analysis and loan administration functions. We urge the committee to provide funding for staff levels adequate to do the job.

## **CONCLUSION**

Assuring a strong and effective REA Telephone Program through authorization of adequate loan levels will retain the worthwhile partnership between REA, telephone companies and rural consumers to the benefit of all Americans.

# UPPER COLORADO RIVER COMMISSION

## STATEMENT OF WAYNE E. COOK, EXECUTIVE DIRECTOR

---

### Summary of Specific Action Requested

Request that funds for the Colorado River Basin Salinity Control Program in the amount of \$18,400,000 be appropriated for Fiscal Year 1994 program for the United States Department of Agriculture onfarm Colorado River Basin Salinity Program.

---

Mr. Chairman, the Upper Colorado River Commission is an interstate compact administrative agency created by the Upper Colorado River Basin Compact of 1948. The member States of the Upper Colorado River Commission are: Colorado, New Mexico, Utah and Wyoming. Since its inception, the Commission has actively participated in the development, utilization and conservation of the water resources of the Colorado River Basin.

The member States of the Upper Colorado River Commission have always given strong support to water resources development and salinity control measures in the Upper Colorado River Basin and are deeply committed to the Colorado River Salinity Control Program. We who are interested in water resources development and salinity control in the Basin appreciate the opportunity to provide testimony before this subcommittee in support of the appropriation of funds to continue the USDA Soil Conservation Service Program of onfarm salinity control. The Commission supports broad-range appropriations to accomplish salinity control programs in both the Department of the Interior and the Department of Agriculture. The purpose of these programs is to maintain salinity levels in the Colorado River system within established numeric criteria while the Basin States continue to develop their Compact appropriated waters.

Specifically, the Upper Colorado River Commission requests Department of Agriculture funding for the development and implementation of the Soil Conservation Service's onfarm management activities in controlling river salinity in the Colorado River Basin as authorized by PL 98-569.

In Fiscal Year 1992 Congress provided \$14,780,000 for work under the Department of Agriculture Colorado River Salinity Control Program. Congress also provided \$13,783,000 million in Fiscal Year 1993. Studies by the Department of Agriculture and the Colorado River Basin Salinity Control Forum for the 1992 Advisory Council report identify that \$18,400,000 is needed in Fiscal Year 1994; \$22,200,000 is needed in Fiscal Year 1995; and \$26,900,000 is needed in Fiscal Year 1996 if water quality standards are to be maintained in the Colorado River.

There is strong interest and active participation by farmers in the five areas where the program has been initiated. An even stronger commitment by farmers to implement salinity control measures in the future is demonstrated by the large number of pending applications for participation. Irrigators in the Uinta Basin area of Utah, the Big Sandy area of Wyoming and the Grand Valley, McElmo Creek and Lower Gunnison areas of Colorado stand ready to pay their requested share of the cost of this water quality control program, with benefits being felt throughout the hundreds of miles downstream in the United States and Mexico. In addition, the Department of Agriculture is proceeding with actions to implement the Colorado River Salinity Control Program in the Moapa Valley area of Nevada.

Three additional areas have been identified in Utah and Nevada as having very cost-effective salinity control onfarm program potential, and they are included within the overall USDA selected plan. The next onfarm salinity


control efforts could begin in the Moapa Valley area of Nevada. The Price-San Rafael area of Utah is under study. These much-needed water quality programs can only move ahead with adequate Federal funding. The Basin States and the local farmers have funds ready to proceed with this partnership and pay at least 51 percent of the cost of this construction program.

Joint studies, in part required under the Clean Water Act, conducted by several Federal agencies and the seven Colorado River Basin States, have determined the amount of salt that must be removed to meet water quality standards. Jointly adopted plans identify the role of various agencies of government to remove the needed amount of salt. The role of the Department of Agriculture is most important, and funding in Fiscal Year 1994 for this program in amounts less than \$18,400,000 would greatly increase the probability of water quality numeric criteria associated with the State-adopted and EPA-approved standard being met.

Should the necessary funding levels in Fiscal Year 1994 and future years not be provided for the Colorado River Salinity Control Program, the probability of water quality numeric criteria being exceeded is greatly increased. Furthermore, less than adequate funding today will unquestionably result in significantly higher future costs to implement the same level of salinity control. The Upper Colorado River Commission urges that due consideration be given to these factors as the Committee recommends the Fiscal Year 1994 funding level for this program.

Further details regarding the specific justification for the salinity program will be presented in the testimony of the Executive Director of the Colorado River Basin Salinity Control Forum as well as by representatives of the Colorado River Basin States.

Mr. Chairman, on behalf of the Upper Colorado River Commission, thank you for providing the Commission an opportunity to present this statement for the Subcommittee's consideration.

  
Wayne E. Cook  
Executive Director

## STATEMENT OF THE U.S. AGRICULTURAL EXPORT DEVELOPMENT COUNCIL

The U.S. Agricultural Export Development Council is an organization of eighty members working around the world to introduce, promote, and expand the demand for U.S. agricultural and forestry products.

The President will soon send to Congress the details of his budget for the coming fiscal year. We appreciate this opportunity to present to you our funding recommendations for fiscal year 1994.

There is no question that strong agricultural exports are good for America. Not only do U.S. farm goods benefit the importing countries by providing better and more varied diets and a higher standard of living, they also benefit the whole U.S. economy by providing economic stimulus and jobs.

Overseas exports directly help the American farmer by providing additional marketing options and improved income opportunities. They also positively influence the non-farm sector of the economy. Unfortunately, this is a fact often lost in the farm export program debate. USDA estimates that U.S. farm exports support 860,000 full-time jobs. These are jobs in processing, packaging, transportation, and other services -- in addition to those generated by the production of the commodities for export. It is further estimated that for each dollar of U.S. farm goods exported, an additional \$1.40 in economic activity is generated.

Moreover, U.S. agricultural trade surpluses have consistently offset the overall U.S. trade deficit. Agriculture remains this country's leading export earner. In FY92, U.S. farm sales abroad totaled \$42.4 billion, up from \$37.6 billion the previous fiscal year. The resulting agricultural trade balance for FY92 swelled to \$18.0 billion.

Before detailing our funding requests for specific USDA-operated programs, we would like to emphasize that these benefits accrue at relatively little taxpayer expense. According to the latest USDA budget, the international program budget accounts for an estimated \$8.7 billion compared to a projected total agricultural budget request for FY93 of \$82.6 billion.

### Continued Success Depends on Good Programs

As an organization dedicated to the goal of expanding U.S. agricultural exports, we are proud to report that those exports have consistently increased, despite the debt problems of the republics of the former Soviet Union. But we caution this committee that future farm trade expansion will depend on a continued strong commitment to our existing programs and on providing USDA with the flexibility necessary to operate them at optimal levels.

### The Foreign Agricultural Service

The Foreign Agricultural Service (FAS) plays a critical role in helping U.S. producers market their products overseas. It provides guidance and supervision to organizations like the USAEDC in developing a world-wide network of multi-commodity promotional programs, including business counselling, product exhibits, trade teams, trade services, market information programs, and trade referral services.

In addition to its other duties in advancing the export of U.S. farm products, FAS administers a variety of important commercial export programs vital to the continued success of our market promotion activities. These include: the foreign market development program; the marketing promotion program; the export credit guarantee programs; the export enhancement program; the sunflowerseed oil assistance program; and the cottonseed oil assistance program.

We note that since enactment of the 1985 Farm Bill, FAS and the Office of the General Sales Manager, have accumulated a combined export program portfolio of about \$9 billion annually, double its previous size. Unfortunately, in the same years, FAS has been challenged to carry out its ever expanding tasks while having been besieged with budget cuts and audits. We believe that additional budget limits on FAS at this time would merely perpetuate outside criticisms of an agency trying to do too much, too quickly, with too few resources. It is the recommendation of the USAEDC that FAS be funded at a level of not less than \$120 million for fiscal year 1994.

### The Foreign Market Development Program

Since 1954, the Foreign Market Development Program (FMD) has proven to be an extremely useful long-term market opening program in many countries. It has been particularly valuable in promoting the export of bulk commodities, such as wheat, corn, and soybeans, which are traded all over the world, where buyers change frequently, and where processing industries are undergoing constant change. In contrast to programs conducted under MPP, FMD programs for bulk commodities are generally smaller and more focussed on technical assistance and



market information. They are also less expensive because they do not necessarily involve market promotion, although they do require a virtually continuous presence in many countries in order to provide adequate trade servicing.

We recommend that the FMD program continue as a separate program and at its current funding level.

#### The Marketing Promotion Program

The Marketing Promotion Program (MPP) is designed to open new markets and improve sales of U.S. agricultural products. As such it is aimed directly at foreign consumers in markets where U.S. food, fiber, and forestry products need export promotion assistance. Priority consideration is provided to commodities injured by unfair trading practices.

In its short life, the MPP has more than proven its value. The MPP has helped to more than double U.S. exports of consumer-ready products from a level of \$5.2 billion in FY85 to a level of \$13.5 billion in FY92.

Not only has it led to increased exports of U.S. agricultural commodities, but it has also led to significantly increased U.S. economic activity. USDA impact analysis indicated that the increase in exports due to targeted promotion from 1986-1988 ranged from \$2.00 to \$7.00 for each \$1.00 of program funding. When you consider an annual funding level of \$200 million for the MPP, these multipliers yield an annual net increase in exports ranging from \$400 million to \$1.4 billion.

In addition, we would like to emphasize that nearly two-thirds of MPP funds are used for generic promotions. Although, given the increasing importance of value-added agricultural exports, the MPP has been shown to be an invaluable tool in the area of branded promotion. USDA estimates that of the \$136 billion in high-value products traded globally in 1990, approximately 65 percent, or \$88 billion, consisted of consumer-oriented products. Consumer-oriented products now represent the fastest growing sector of U.S. export trade in food and agricultural products. Nearly all consumer-oriented products are branded items or are processed by branded companies and that consumers make purchasing decisions most often on brand loyalty.

Like its predecessor, the Targeted Export Assistance (TEA) program, the MPP is a cost-sharing program to assist eligible commodity and trade organizations in conducting USDA-approved foreign market development programs. Furthermore, eligibility for promotional assistance is limited to products with at least 50 percent U.S. origin by weight. The 1990 farm bill authorizes MPP spending at \$200 million annually, we respectfully request that this committee appropriate that amount for fiscal year 1994.

#### The Export Credit Guarantee Programs

According to USDA, export credit guarantees represent the largest share of agricultural export value, over 10 percent of total agricultural exports. The Export Credit Guarantee program or GSM-102, provides credit guarantees to importers for the short-term -- from six months to three years. The Intermediate Export Credit Guarantee program, or GSM-103 extends the credits to importers from a period of more than three years to up to ten years.

The 1990 farm bill authorized the CCC to annually provide at least \$5.0 billion for the GSM-102 program and \$500 million for the GSM-103 program through 1995. In FY92, \$6.1 billion in GSM-102 export credit guarantees were announced for use in thirty-five countries, and U.S. exporters registered a record \$5.6 billion in actual sales. This represents the largest amount of sales ever registered under the program. So far in FY93, USDA has announced GSM-102 allocations of about \$4 billion to thirty-one countries.

The trend is similar for the GSM-103 program. In FY92, \$229 million in guarantees were announced for use in ten countries. To date in FY93, GSM-103 credit guarantee announcements total \$258 million to eight countries.

We recommend that the Committee closely review last year's budget request for a combined total of \$5.5 billion for both the GSM-102 and GSM-103 programs. And we request that the FY94 allocation for GSM-102 be increased to a level of at least \$7.0 billion and that the GSM-103 program be increased to a level of \$750 million.

#### Export Enhancement Programs

The Export Enhancement Program, enacted in 1985, enables U.S. exporters to meet prevailing world prices for targeted commodities in targeted markets. The primary objective of the program has been and continues to be, to boost U.S. agricultural exports. Its ancillary goals have been to challenge the unfair trading practices of competing exporters, particularly the European Community and to encourage serious negotiations on agricultural trade under the auspices of the GATT.

Since its inception, there have been numerous criticisms of the EEP, many contesting its effectiveness. It is our strong contention, as marketers of U.S. commodities, that the EEP has made possible sales of U.S. agricultural products that may not have otherwise been made due to the presence of subsidized prices in the world market. The program has met its primary objective. EEP-assisted sales have annually accounted for up to 65 percent of U.S. wheat exports, 88 percent of flour exports, 98 percent of barley exports, 10 percent of barley malt exports, 12 percent of semolina exports, 6 percent of rice exports, 22 percent of vegetable oil exports, 29 percent of frozen poultry exports, and 69 percent of table egg exports.

Last year, this committee removed the ceiling on the EEP and provided the Department of Agriculture with the necessary flexibility to maximize the effectiveness of the program. As of February 11, 1993, USDA had used over \$513 million in its operation of the EEP. At that time, the EEP had resulted in 147 initiatives targeting over 97 countries for the sale of U.S. commodities. We request that the funding for EEP remain uncapped for FY94.

The cottonseed oil assistance program, the dairy export incentive program and the sunflowerseed oil assistance program should also continue to be used to encourage the sale of additional quantities of these commodities in world markets at competitive world prices through the payment of bonuses to exporters. The 1990 farm bill authorized \$50 million for the operation of these programs in each of the fiscal years 1993 through 1995. We support the appropriation of the authorized amounts for FY94.

#### The Food for Peace Program

Developing countries represent our largest potential for long-term growth in export markets. The food assistance programs administered by FAS have long been an important link between our producers and the lesser-developed and developing countries. These important programs generally fall under the umbrella of the Food for Peace Program.

PL-480 or the Food for Peace program is the primary means by which the U.S. provide food assistance to countries in need. Since 1954, PL-480 has had an excellent record in supporting the market development, economic, humanitarian, and other objectives of the United States. Realizing the need for the use of concessional sales programs to establish marketing relationships in Eastern Europe and the republics of the FSU, we recommend that the committee fund the PL-480 food aid programs at no less than its current level of \$1.486 billion for FY94.

#### Conclusion

In conclusion, we would like to briefly mention trade with the republics of the former Soviet Union (FSU). Since November 24, 1992, the FSU has been suspended from the GSM-102 program and most commercial activity with the republics has come to a standstill. This is an untenable situation. If the lull in trade with the FSU persists, the already serious backlog in the grain marketing system will be compounded by supplies from the new harvest. These excess supplies will surely depress farm gate prices and increase the costs of government price and income support programs.

We are unable to present to you a solution to this critical problem. Clearly, immediate action must be taken to restart trade with the FSU and our organization stands ready to assist this committee and any other in advancing a cohesive and realistic plan.

Finally, on behalf of all USAEDC members, we would like to express our gratitude to this committee for the strong support you have given to export promotion, market development, and trade policy initiatives.

## CITY OF VIENNA, GA

## STATEMENT OF STANLEY GAMBRELL, ADMINISTRATOR

Mr. Chairman, Members of the Subcommittee, my name is Stanley Gambrell and I am the City Administrator of Vienna, Georgia, the County seat of Dooly County. For those of you who are not familiar with the geography of Georgia, Dooly County is in the middle of the state, in an agricultural region sometimes called "the other Georgia" in contrast to the more affluent Atlanta area. Thank you for providing me the opportunity to submit this statement to the Subcommittee, to request your assistance in securing the necessary funds for water and waste treatment infrastructure improvements critical to economic development in our region.

**Background on Vienna and Dooly County**

Population: The population of Dooly County has been declining steadily since the period between 1910 and 1920 when the cotton boll weevil invaded the land and our agriculture-based economy began its long downward spiral. According to the U.S. Census of 1910, Dooly County had 20,554 residents in that year; the 1990 census shows Dooly County having only 9,901 residents, a loss of 10,653 persons or 52 percent during that period. The loss from 1980 to 1990 alone was 8.5 percent.

Education: The 1980 Census showed that the education levels of Dooly County residents 25 years of age and older were significantly below state averages. Over a third (39.3%) of Dooly County's age 25+ population had fewer than 8 years of formal education. This is over 1.68 times the State average of 23.7 percent. In addition, almost two-thirds (66%) had failed to complete high school. This is 1.5 times (50% higher) the state rate of 44 percent. Furthermore, only 8 percent had a bachelor's degree or higher, as compared with 15 percent for the State.

Income: According to the 1980 U.S. Census, 34 percent of the residents of Dooly County were living below the poverty line. As such, Dooly had the 6<sup>th</sup> highest percentage of any of Georgia's 159 counties. In addition, data from 1989 on percent of households receiving Federal Aid for Families with Dependent Children (AFDC) payments shows that Dooly and the surrounding counties continue to rank far above the state average. A good indicator of how Dooly County's income levels compare to national income levels are the per capita income figures for 1988 provided by the Commerce Department's Bureau of Economic Analysis: according to the Commerce Department's figures, Dooly County residents had an average income of \$11,995.00 per year, only 72.7 percent of the national average.

Unemployment: Dooly County suffers from a growing shortage of job opportunities, resulting in increasing unemployment levels. In fact, according to unemployment statistics compiled by the Georgia Department of Labor, between July 1991 and July 1992, the unemployment rate in Dooly County rose from 5.6 percent to 8.5 percent. The annual unemployment rates for the seven counties that comprise the Vienna Labor Market Area are equally high, ranging from 1.22 to 2.00 times the State average in 1991.

#### **Plan for Economic Revitalization**

In order to improve their economic status, Dooly County residents, and the residents of the surrounding seven county Labor Market Area are in desperate need of long-term employment opportunities that are in-line with their education and skill levels and provide adequate salaries.

In response to this need, the City of Vienna has been successful in negotiating an agreement under which Cargill, Inc. will undertake a \$35 million expansion of its poultry operations in the Middle Georgia area. The largest element in this plan is a new \$22 million poultry processing plant to be located in Vienna. This plant will provide jobs for 450 to 500 employees in

the short-term, and up to 1,000 permanent full-time employees when the plan reaches full production. The yearly payroll for these employees is expected to be \$14 million.

Projected Economic Impact: The completion of the proposed project will directly and substantially impact the economic condition of the low- and moderate-income residents of Vienna, Dooly County, and the surrounding seven-county Labor Market Area. In fact, while Cargill is committed to hiring at least 50 percent low- and moderate-income persons, their track record at a nearby plant has been much higher. There, almost 98 percent of the new employees were of low- and moderate-income at the time of their hiring.

Further, this positive impact will be widespread. Based upon the commuting patterns for this plant and the geographic situation in and around Vienna, it is expected that somewhat over half of the new employees will come from Vienna and Dooly County, with the balance coming from the surrounding counties.

Project Elements: In order to accommodate the physical needs of the plant, the City of Vienna will be required to make major improvements to several of its infrastructure systems as part of this project. In particular, because Cargill's planned poultry processing plant will be a large user of water, and generator of wastewater, the most critical infrastructure improvement that must be undertaken is the construction of a water and wastewater treatment facility. Construction of this facility is expected to cost about \$6.5 million, and include the following components:

1. Two new 1200 gpm. deep well with chemical feed building
2. a 400,000 gallon elevated water storage tank
3. ±7,000 LF of 12" water main
4. ±7,000 LF of gravity sewer collection line
5. a 2,000 GPM sewage transfer pumping station with bar screen
6. ±2,000 LF of 12" sewer force main
7. a 1.2 MGD "preliminary" sewage treatment system
8. a 1.2 MGD "secondary" land treatment irrigation system
9. ±10,000 LF of 6" steel natural gas line
10. acquisition of ±448 acres of land.



**Request for Federal Support**

The City of Vienna is exploring a diverse variety of funding sources in order to raise the funds required to construct this water and waste treatment facility, including a local bond issuance and the pursuit state community development funds. We understand that this Subcommittee has recognized the significant need for economic revitalization efforts in the nation's rural areas, and has provided support for projects of this nature through the "rural development grants" and "rural water and waste disposal grants" sections of your Appropriations Bill, as authorized by the Rural Development Act.

It is our hope that a Federal grant in the amount of \$3 million dollar will be provided for these water and sewer infrastructure improvements by your Subcommittee under this or another appropriate section of your bill. Combined with the \$35 million commitment of private funds by Cargill, Inc., this Federal grant will insure the success of an economic development project with the potential to directly and substantially improve the economic condition of low- and moderate-income individuals in this region, creating 1,000 permanent jobs once it is completed.

We do not consider this a "hand out" but rather a "lift up" for our community and the seven county area that surrounds us. We hope you will consider this proposal -- and the dramatic return it promises in terms of permanent jobs -- favorably in your FY94 bill. Finally, we thank you, again, for allowing us to submit this statement to the Subcommittee.

## STATEMENT OF THE WHITEFLY MANAGEMENT COMMITTEE

### Overview Of The Whitefly Menace, Its Devastation, And Economic Impact In Southern California

The Whitefly Management Committee (WMC) was formed out of desperation in the fall of 1991 by agricultural producers in Imperial County and lower Colorado River Basin (covering desert farming areas of Southern California) to formulate a strategy for combatting *bemisia tabaci* now commonly called the silverleaf (sweetpotato) whitefly. It is comprised of 16 committee members representing a cross-section of farming interests from Imperial County, Blythe and Coachella in Riverside County, and Mexico. The committee has funded a number of high profile research projects with money collected from the agricultural interests of the area, as well as private donations. The Office of the Agricultural Commissioner of Imperial County has served as a clearing house and action center that includes liaisoning with numerous other whitefly-afflicted areas in the U.S. and Northwest Mexico. John Pierre Menvielle, a diversified producer near Calexico, is Chairman of the committee and Stephen Birdsall, Imperial County Agricultural Commissioner, is its Executive Officer. The WMC works closely with the state, the university system, and the cooperative effort of such USDA agencies as ARS, APHIS, CSRS, and CES.

Areas represented by the WMC suffered an overwhelming invasion of a new whitefly strain in the latter part of 1991. In a period of a few short months the whitefly menace caused agricultural crop losses of over \$130 million and related economic losses of over \$170 million. Several thousand jobs were lost in Imperial County due to the disaster, in an area of only 110,000 residents where unemployment often averages above 30 percent. This past summer the county led the nation in percentage unemployment. Between May 1992 and January 1993, the gross value loss attributed to whitefly damage and/or lost production amounted to \$100,497,225, bringing known agricultural losses of the area in an 18-month period to above \$230,000,000. As an example of lost production, Imperial County normally produces nearly 13,000 acres of fall/winter melons but only 80 acres were produced in 1992. Other crops also were cut back. Crop acreage reduction was due not only to the continued presence of the whitefly but also because of the economic setback imposed by its damage.

We now know the silverleaf whitefly is a major pest of innumerable crops such as cotton, alfalfa, cole crops, cucurbits—mainstays of farming in Imperial and Riverside Counties—and many different ornamental plants. Also it is a vector of many important diseases and new plant disorders, both in the field and even greenhouses. It has also caused major losses in Mexico, Arizona, South Texas, and Florida. Additionally it is being increasingly detected in fields of New Mexico, Mississippi, the San Joaquin Valley of California, and in such northeast locales as New Jersey's commercial greenhouses.

The Governor of California declared a state of emergency in Imperial and Riverside Counties on Nov. 9, 1991 and the U.S. Department of Agriculture was petitioned for federal disaster assistance. The USDA denied allowing our farmers' devastating crop losses to be eligible for assistance, stating a lack of connection between the flourishing of insects and a severe weather pattern. This was the decision in spite of the WMC having validated unusual climatological occurrences in and around the region. Temperatures were warmer than normal in October and most of November 1991. In the winter of 1990, the area recorded its coldest temperatures in 40 years and the situation helped drive out an earlier, controllable strain of whitefly. The whitefly insect evolved a more efficient and devastating strain. When coupled with accelerated development brought on by higher temperatures, all control efforts were nullified and a major economic disaster occurred.

When new federal disaster assistance legislation is promulgated, certainly whitefly-caused damage as sustained by agricultural producers ... damage resulting from an insect that defied the producers' best efforts to defend against it and completely overwhelmed them ... should be eligible for assistance. Such devastation is just as painful as the result of weather-caused disasters.

### Whitefly Control Efforts

Although whitefly control research is heavily dependent on federal involvement, the WMC wanted to build a fund for its own self-help involvement. Money was received from various private businesses but a large share of the fund was raised by producers paying a 10-cent per acre-foot fee for water supplied by the Imperial Irrigation District.

The WMC developed and implemented a five-point strategy for whitefly control incorporating (1) plant management (2) biological controls (3) chemicals (4) biology, and (5) application technology and has invested several hundred thousands of dollars in the projects. Its funding of projects includes research at

the University of California-Riverside, the Imperial County Agricultural Extension Service, and the University of Arizona. Additionally, the WMC has been working on research projects on a local level with the Imperial County Agricultural Commissioner's Office, the California Department of Food and Agriculture, and the USDA.

Among current projects being given major focus is a cotton "edge" experiment spurred by findings in the Parker and Paloma Valley cotton area of Arizona where it was noticed that whitefly levels began at the edge of fields with the prevailing winds. A total of 18 fields is being used to test the use of predators and parasites in the middle and edges of various fields, to compare results with the use of chemicals and also in similar-sized plots using standard farming practices. This experiment further illustrates the breadth of teamwork that is being given whitefly control research. Taking part in the project are the USDA, the California Cotton Pest Control Board, the University of California, Arizona Cotton Research and Protection Council, the California Department of Food and Agriculture, and the Imperial County Agricultural Commissioner's Office.

To properly chronicle the totality of work done by the WMC and above-mentioned cooperative elements of the state, university and federal government toward whitefly control in the past 18 months would require more space than allowed for this statement. Shorter growing seasons for cotton, genetic work to develop whitefly-resistant plant varieties—including drought-resistant alfalfa which is a major crop in the region and, like cole crops and cucurbits, has suffered extensive economic damage—use of predators such as parasites and beetles, use of Section 18 for certain chemicals for immediate control and their study for baseline resistance, studies on urban ornamental plants, and a host of different cultural practices have been part of the action plan.

#### **Additional Funding Needs**

The WMC is grateful for the work done by all contributors to the research effort, especially the U.S. Department of Agriculture and the funding provided by the Congress. USDA's role in the five-year National Research and Action Plan for the whitefly is extremely important and must be funded over the remaining several years of the project. The development of effective, long-term capabilities to manage the whitefly menace will require considerably more time, effort and money. The key USDA agencies involved in the action plan will need an increase in funding over present allocations. The ARS, for example, will need an additional \$5,000,000 in base funds over the next three years to sustain its role in the action plan. Much of the ARS participation to date has been funded by the redirection of monies from other ARS programs. With the whitefly acquiring new defense mechanisms and extending into other crop areas, the ARS will need to have increased funds over and above those that have been redirected.

Funding for APHIS' participation in the whitefly action plan amounted to \$3,000,000 in FY 1993 primarily for surveys and development of biological controls which are showing considerable promise. This work must continue and hopefully with the addition of an Integrated Pest Management project that would necessitate another \$500,000 for a total of \$3,500,000 for the new fiscal year. The WMC knows the desire of producers in the area is to develop a new and extensive Integrated Pest Management program that incorporates biological controls and considerable research will be required to do so.

Also, funding is necessary to involve the CSRS more actively in the whitefly action plan so that the tremendous research capability of the extension service can also be directed to harnessing the pest especially in the areas of biological, chemical and cropping practice controls. The National Cotton Council of America supports the IPM special grant in the hope it will provide a funding source so that state scientists can secure monies to develop the comprehensive wide area IPM programs to manage the whitefly. CSRS asks that \$7,000,000 be budgeted for this program for FY 1994; FY 1993 amount was \$4,457,000. The WMC concurs with the NCC in support of additional funding for CSRS.

## WILDLIFE MANAGEMENT INSTITUTE

## STATEMENT OF DONALD F. McKENZIE, RESOURCE ASSOCIATE

Mr. Chairman:

The Wildlife Management Institute (WMI) appreciates this opportunity to present its views regarding Fiscal Year (FY) 1994 appropriations for agencies and programs of the U.S. Department of Agriculture (USDA). WMI is a private, nonprofit scientific and educational organization, staffed by professional natural resource managers, that has been dedicated to the restoration and sound management of wildlife and other natural resources since 1911.

WMI's interest in agricultural appropriations stems from the reality that the best opportunity for effectively restoring and perpetuating wildlife resources of this country lies in working cooperatively with landowners on private land. Agencies and programs of USDA have more impact on natural resources than those of any other government entity. The last two farm bills have provided powerful tools for USDA to restore and benefit numerous natural resources.

#### Farm Service Agency

WMI's basic position on the reorganization of USDA, as outlined in the Administration's budget request for the new Farm Service Agency (FSA), is that an effective and accountable conservation delivery mechanism is imperative if USDA is to achieve the conservation goals established in the 1985 Food Security Act and the 1990 Food, Agriculture, Conservation and Trade (FACT) Act. USDA's new conservation responsibilities under these acts cannot be implemented without sufficient qualified technical staff at the field level, as well as agency resolve, to provide needed technical support and compliance monitoring.

Since it is impossible to determine what specific impacts the proposed budget for the FSA will have on the delivery mechanism for conservation technical assistance, we can only offer a broad recommendation. WMI recommends that the proposed 23 percent reduction in FSA staff years and the proposed 26 percent reduction in county office staff years be achieved without reducing existing USDA field-level conservation technical capabilities.

#### Wetlands Reserve Program (WRP)

In WMI's opinion, the WRP is possibly the most beneficial and cost-effective conservation program ever devised. It is a *voluntary* program that provides incentive and just compensation for landowners to restore and protect wetlands, while allowing landowners to retain title to as well as some economic uses of the restored wetlands.

The WRP has proven to be popular among farmers and conservationists, alike. The demand for the WRP by farmers during the pilot signup in 1992 exceeded the enrollment cap by about 9:1. Farmers are enthusiastically anticipating additional signups in many other states.

The WRP is the best tool available to begin the long-term reversal of the decades-old trend of declining wetlands acreage. The WRP ensures the maximum public conservation benefits from federal taxpayer dollars invested by: (1) requiring that sound restoration and conservation plans be implemented on the lands accepted, (2) establishing perpetual easements on the land enrolled by the willing landowners, and (3) retiring surplus marginal croplands.

The WRP also represents a test of the feasibility of the agriculture community's desire for environmental incentives rather than requirements. If environmental incentive programs are not funded, society's environmental goals can only be met with mandates.

WMI recommends that the Appropriations Committee meet the Administration's request for \$370.3 million to enroll 450,000 acres in the WRP in FY 1994. We also enthusiastically support the congressional intention to meet the one million-acre enrollment goal by the end of 1995.

### Conservation Reserve Program (CRP)

WMI supports the Administration's stated objective of meeting the CRP enrollment goal of 39 million acres by the end of 1995. The CRP is meeting, even exceeding, all its objectives, including reduction of soil erosion and sedimentation, reduction of surplus cropland, and restoration of habitats for wildlife and fish. WMI recommends the Appropriations Committee support the Administration's request for \$1.827 billion to fund existing contracts plus a one million-acre CRP signup in 1994.

### Watershed and Flood Prevention Operations

WMI notes and appreciates that the Administration intends for this program to emphasize non-structural land treatment measures that minimize the number of construction projects and increase the local cost-share portion for planning and operations. However, recent actions of the Soil Conservation Service in anticipation of passage of the Administration's economic stimulus package demonstrate that the agency remains intent on relying upon structural remedies. Consequently, WMI is concerned that existing authorized, but obsolete, projects that rely heavily on structural measures such as channelization and multiple dams will continue to be a high priority of project proponents. WMI cannot support a program that continues to foster structural remedies to watershed management.

WMI recommends that the proposed FY 1994 funding level of \$150 million for Watershed and Flood Prevention Operations be *reduced*, to the FY 1992 appropriation level of \$114 million. In addition, we recommend that 50 percent of appropriated funds be *earmarked* for non-structural land treatment measures.

### Extension Service

WMI notes that the Administration requested \$270 million for the Smith-Lever 3(b)&c) Formula program for FY 1994, a 2.7 percent increase above FY 1993 funding. This increase will begin to improve the balance of Extension's base and targeted programs.

However, the Cooperative Extension Service has an unfunded commitment to establish and improve environmental stewardship education programs. WMI would like to encourage close cooperation between Extension and federal and state natural resource agencies. Without a commitment of appropriate funding to support this program, it is unlikely that states will divert already targeted 3(b)&c) funds to ensure the needed growth and effectiveness of the education programs.

WMI recommends that the FY 1994 funds be increased 4 percent above FY 1993, to a level of \$273.2 million, *provided that* not less than 35 percent of the increase will be applied to environmental stewardship education programs.

### Animal and Plant Health Inspection Service, Animal Damage Control (APHIS-ADC)

APHIS-ADC is responsible for developing and implementing methods of controlling wildlife damage to agriculture, aquaculture, forests and other resources. The agency also is responsible for protecting the public health and safety by preventing animal collisions with airplanes at airports.

APHIS-ADC's control activities are cooperatively funded through state and county governments and private producers, and generally are integrated within broad wildlife management programs. An explanation of this integration, as well as the environmental impacts of these programs, is described in the recently released "Animal Damage Control Program--Supplement to the Draft Environmental Impact Statement." While this document clearly identifies the national scope of the APHIS-ADC program, it does not yet address local impacts. WMI recommends that the current funding level of \$26.2 million for APHIS-ADC Operations be increased by \$1.5 million to enable the agency to complete the site-specific Environmental Impact Statements necessary to clearly understand the impacts of the program on a local scale.

General public agreement exists that, in some situations, animals do cause problems that need to be addressed. However, considerable controversy surrounds the methods used by APHIS-ADC to resolve some animal damage problems. WMI recommends that the current appropriation level of \$9.5 million for APHIS-ADC Method Development be increased by \$5 million to develop socially acceptable and environmentally safe alternative technologies to resolve animal damage conflicts.



APHIS-ADC's research facility, located in the Denver Wildlife Research Center, has become ill-suited to conduct the research needed to develop solutions to current and future problems associated with wildlife damage management. APHIS-ADC already has committed \$8.5 million to relocate this facility to Colorado State University in Fort Collins. However, before this move can be accommodated, a five-year commitment of an additional \$30 million is needed. WMI recommends that this commitment be made in this budget cycle by directing that \$6 million of the existing APHIS Building and Construction Funds be allocated for each of the next five years to construct the new facility.

Mr. Chairman, WMI appreciates the opportunity to present this testimony for your consideration.

## STATE OF WYOMING

## STATEMENT OF GORDON W. FASSETT, STATE ENGINEER

Summary: This letter requests Fiscal Year 1994 funding in the amount of \$18,400,000 for the United States Department of Agriculture's Colorado River Salinity Control Program, and supports testimony presented by the Colorado River Basin Salinity Control Forum

Dear Senator Bumpers:

I am writing in support of a Fiscal Year 1994 appropriation of \$18,400,000 to the Department of Agriculture for that agency's Colorado River Salinity Control Program. You recently received testimony from the Colorado River Basin Salinity Control Forum (Forum) submitted by the Forum's Executive Director, Jack Barnett. The State of Wyoming concurs in the FY 1994 funding request and justification for that funding level set forth in the Forum's testimony.

In addition to being the Wyoming State Engineer, I represent the State of Wyoming on the Colorado River Basin Salinity Control Forum and the Colorado River Basin Salinity Control Advisory Council. As you know, the Council was created by the 1974 Colorado River Basin Salinity Control Act (Public Law 93-320). Like the Forum, the Advisory Council is composed of gubernatorial representatives of the seven Colorado River Basin states, and serves as a liaison between the seven States and the Secretaries of the Interior and Agriculture and the Administrator of the Environmental Protection Agency (EPA). It advises these Federal officials on the progress of the Federal Government's efforts to control the salinity of the Colorado River and annually makes funding recommendations, including the amount believed necessary to be expended by the USDA for its onfarm Colorado River Salinity Control Program.

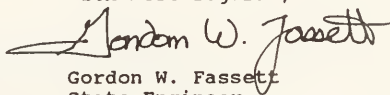
With the benefit of studies and analyses made by the Department of Agriculture and the Colorado River Basin Salinity Control Forum, the Advisory Council has concluded that the present Fiscal Year 1993 level of funding (\$14,783,000) is not sufficient to keep the salinity control program on schedule with the Plan of Implementation. The Plan of Implementation and the numeric water quality criteria established for three Lower Colorado River stations constitute the State-adopted, EPA-approved, water quality standards for the Colorado River. The Advisory Council believes that an appropriation in the amount of \$18,400,000 is necessary for Fiscal Year 1994. The Forum's testimony is in accordance with the Advisory Council's written recommendations. Falling behind the schedule set forth in the Plan raises vitally important questions about whether the Basin States can be assured that the water quality numeric criteria, established as a component of the Water Quality Standards for the Colorado River, will continue to be complied with in the future.

The Advisory Council, in its 1992 Annual Report, recommended the appropriation of \$18,400,000 for Fiscal Year 1994, \$22,200,000 in Fiscal Year 1995 and \$26,900,000 for Fiscal Year 1996. Should these necessary funding levels in Fiscal Year 1994 and future years not be provided, the progress achieved by the USDA Colorado River Salinity Control Program will fall far short of the level contained in the Plan of Implementation, which has been specifically designed and jointly developed by the States and Federal agencies to ensure continuing compliance with the numeric water quality criteria for salinity. In addition, a funding shortfall at present will

undoubtedly result in significantly higher costs to implement the same level of salinity control through the CRSC Program in future years.

I wish to thank you for the opportunity to submit this letter and would request, in addition to your consideration of its contents, that you make it a part of the formal hearing record concerning FY 1994 appropriations for the Department of Agriculture. In accordance with the Subcommittee's direction, I have submitted five copies of this letter.

With best regards,

A handwritten signature in dark ink, appearing to read "Gordon W. Fassett". The signature is fluid and cursive, with a long horizontal stroke at the beginning and a loop at the end.

Gordon W. Fassett  
State Engineer



## LIST OF WITNESSES, COMMUNICATIONS, AND PREPARED STATEMENTS

	Page
Allee, Brian, senior fisheries scientist, Harza Northwest, Inc .....	100
American Association of Nurserymen, statement of .....	2
American Association of Retired Persons, statement of .....	9
American Farm Bureau Federation, statement of .....	12
American Federation of Government Employees, statement of .....	24
American Sheep Industry Association, statement of .....	31
American Society for Microbiology, statement of .....	34
 Baker, Dr. Kendall, president, University of North Dakota .....	 254
Balcerzak, Richard W., acting general manager, Metropolitan Water District of Southern California .....	131
Barnett, Jack A., executive director, Colorado River Basin Salinity Control Forum .....	75
Batterson, Ted R., director, North Central Regional Aquaculture Center .....	253
Bedoukian, Robert, president, Bedoukian Research, Inc .....	47
Berg, Norm, Washington representative, Soil and Water Conservation Soci- ety .....	309
Bergland, Bob, executive vice president, National Rural Electric Cooperative Association .....	225
Bowen, Dr. John M., director, Veterinary Medical Experiment Station, National Association of State Universities and Land-Grant Colleges .....	175
Brown, J. Larry, director, Center on Hunger, Poverty and Nutrition Policy, Tufts University .....	345
Burzell, Dr. Linden, vice president and general manager, Amorient Aquafarm Inc .....	37
 Calvin, Dennis D., associate professor of entomology, Pennsylvania State University .....	 269
Campbell, Dr. John R., president, Oklahoma State University .....	262
Campbell, Faith T., National Resources Defense Council .....	219
Carothers, Robert L., president, University of Rhode Island .....	285
Center for Forest Products Marketing, statement of .....	58
Center for Meat and Poultry Safety and Quality, Texas A&M University, statement of .....	322
Center for North American Studies, Texas A&M University, statement of .....	324
Center for Southern Crop Improvement, Texas A&M University, statement of .....	326
Chicoine, David L., head, Department of Agricultural Economics, University of Illinois .....	114
Coalition for FDA Resources, statement of .....	70
Colantuno, Richard, CEO, Limestone Springs Fishing Preserve .....	127
Consortium of Social Science Associations, statement of .....	77
Cook, Wayne E., executive director, Upper Colorado River Commission .....	354
Culver, Chuck, director of development, University of Arkansas .....	43
Curl, Dr. Sam E., dean, College of Agricultural Sciences and Natural Re- sources, Texas Tech University .....	340
 Dorfman, Gerald, president, National Utility Contractors Association .....	 236
Ek, Dr. Alan R., director, Division of Forestry, National Association of State Universities and Land-Grant Colleges .....	180
 Falk, Dennis, president, Prairie Public Television .....	 278
Fassett, Gordon W., State engineer, State of Wyoming .....	368



	Page
Faucett, Ernest, board member, Arkansas Rural Water Association .....	234
Finney, E.E., Jr., Acting Administrator, Agricultural Research Service, letter from .....	296
Food Animal Concerns Trust, statement of .....	92
Fuller, Peter A., director, technology acquisition, Pioneer Hi-Bred International, Inc .....	277
Gambrell, Stanley, administrator, City of Vienna, GA .....	359
Garrison, Dr. Thomas, vocational director, South Putnam School District .....	204
Gillespie, Dr. Jerry R., professor and head, Department of Clinical Sciences, Kansas State University .....	93
Glenn, Martha Cole, director, Federal Legislative Affairs, Humane Society of the United States .....	105
Gomes, W. Reginald, dean, College of Agriculture, University of Illinois .....	118
Graham, Lawrence T., president, Chocolate Manufacturers Association .....	69
Grossi, Ralph E., president, American Farmland Trust .....	15
Haberern, John, president, Rodale Institute .....	292
Hansen, Dr. David O., associate dean and director, International Programs in Agriculture, National Association of State Universities and Land-Grant Colleges .....	167
Health Industry Manufacturers Association, statement of .....	101
Helmick, Dr. Sandra A., associate dean, College of Home Economics and Education, National Association of State Universities and Land-Grant Colleges .....	172
Holt, Donald A., director, Agricultural Experiment Station, University of Illinois .....	118
Ibanez, Dr. Manuel, president, Texas A&M University .....	328
Ikenberry, Stanley O., president, University of Illinois .....	118
Illum, Vernon L., regional manager, CCT Corporation .....	57
International Dairy Goat Research Center, Texas A&M University, statement of .....	332
Kaltenbach, Dr. Colin, director, Arizona Agricultural Experiment Station, National Association of State Universities and Land-Grant Colleges .....	160
Kelley, Brian, vice president, Arkansas Enterprise Group .....	38
Kidd, Robert L., chairman, Council for Agricultural Research, Extension, and Teaching .....	82
Kishore, Ganesh M., director, food quality, Monsanto Co .....	136
Landry, Walter, past president, Louisiana Aquaculture Association .....	128
Lawrence, Dr. Francis L., president, Rutgers, the State University of New Jersey .....	297
Magrath, Dr. C. Peter, president, National Association of State Universities and Land-Grant Colleges .....	157
Maizel, Margaret Stewart, National Center for Resource Innovations .....	193
McCraren, Joseph, executive director, National Aquaculture Association .....	142
McIlwain, Dr. Thomas D., director, Gulf Coast Research Laboratory .....	96
McKenzie, Donald F., resource associate, Wildlife Management Institute .....	365
Merrill, Lee Anne, president, M&R Durango, Inc .....	130
Meyers, Richard, legislative director, National Nutritional Foods Association ..	210
Miller, Dr. Raymond J., chair, Fiscal Year 1994 Committee, National Association of State Universities and Land-Grant Colleges .....	151
Miller, Robert H., dean and director, University of Rhode Island .....	286
Mississippi State University Cooperative Extension Service, statement of .....	132
Mossinghoff, Gerald J., president, Pharmaceutical Manufacturers Association ....	275
Myers, Lester W., president and general manager, Delta Western, Inc .....	86
Nagel, Jerry, director, Red River Trade Corridor, Inc .....	279
National Alliance for Fair Competition, statement of .....	138
National Association of Conservation Districts, statement of .....	144
National Association of Home Builders, statement of .....	148
National Association of WIC Directors, statement of .....	183
National Cotton Council of America, statement of .....	199
National Electrical Manufacturers Association, statement of .....	207
National Institute for Livestock and Dairy Policy, Texas A&M University, statement of .....	336

	Page
Navajo Nation, statement of .....	239
Nelson, Vernon L., vice president and general manager, Hung's Shrimp Farm, Inc .....	109
New Mexico State University, statement of .....	244
Nichols, Buford L., director, Children's Nutrition Research Center, Baylor College of Medicine .....	28
Nichols, Dr. Buford L., Jr., director, Children's Nutrition Research Center .....	64
Notar, Russell C., president and CEO, National Cooperative Business Association .....	198
Nourse, Timothy M., chairman, Legislative Committee, North American Strawberry Growers Association .....	248
O'Neal, John F., general counsel, National Rural Telecom Association .....	229
Obenauf, Gary, director of research, California Prune, Raisin, and Walnut Marketing Boards .....	54
Pacleg, Crystal H., statement of .....	265
Pancholy, Dr. Sunil K., director, agricultural research, National Association of State Universities and Land-Grant Colleges .....	168
Penn, Sinthya, president, Beneficial Insectary .....	48
Pennsylvania Lamb Marketing Cooperative, statement of .....	268
Peterson, R. Max, executive vice president, International Association of Fish and Wildlife Agencies .....	121
Rashford, Father Nicholas, president, Saint Joseph's University .....	300
Regional Impacts of Farm Programs on Crop Farms, statement in support of .....	337
Romer, Hon. Roy, Governor, State of Colorado .....	73
Rosenberg, Irwin H., director, Human Nutrition Research Center on Aging, Tufts University .....	346
Shepherd, C.G., director, Southern Regional Aquaculture Center .....	320
Shuler, T.S., president, Delta Council .....	84
Silverglade, Bruce, director of legal affairs, Center for Science in the Public Interest .....	61
Society of American Florists, statement of .....	301
Sohoni, Venkat, president and chief executive officer, Biosys, Inc .....	51
Spiker, Boyd, manager, Rock Port Telephone Co .....	288
Stevens, Christine, secretary, Society for Animal Protective Legislation .....	305
Stime, Mark, president, Eastern South Dakota Soil and Water Research Farm, Inc .....	88
Sundlun, Hon. Bruce, Governor, State of Rhode Island .....	283
Tampkins, Gilbert, associate administrator, 1890 Cooperative Extension Program, National Association of State Universities and Land-Grant Colleges ..	168
Thames, Dr. Shelby F., professor of polymer science, University of Southern Mississippi .....	316
Thurmond, Hon. Strom, U.S. Senator from South Carolina .....	343
Ticehurst, Mark, president, Biobase Technologies, Inc .....	50
U.S. Agricultural Export Development Council, statement of .....	356
United States Telephone Association, statement of .....	350
Voss, Henry J., director, California Department of Food and Agriculture .....	52
Walther, Bob, vice president, Government relations, National Potato Council .....	217
Webb, Dr. B.K., dean and director, Cooperative Extension Service, National Association of State Universities and Land-Grant Colleges .....	161
Weber, Arnold R., president, Northwestern University .....	258
White, Dr. John M., associate dean, College of Agriculture and Life Sciences, National Association of State Universities and Land-Grant Colleges .....	164
Whitely Management Committee, statement of .....	363
Wilson, Gary, director, animal health/inspection, food policy and research, National Cattlemen's Association .....	189
Wool and Mohair Laboratory, Texas A&M University, statement of .....	338
Yates, Mike, owner/manager, South Texas Hatchery .....	314
Yopp, Dr. John, associate vice president for academic affairs and research, Southern Illinois University at Carbondale .....	111

	Page
Ziewacz, Judy K., director, National Rural Cooperative Development Task Force .....	221
Zimbelman, Robert G., executive vice president, Federation of American Societies of Food Animal Sciences .....	90













BOSTON PUBLIC LIBRARY

3 9999 05981 844 1

ISBN 0-16-043548-X

9 780160 435485 90000





